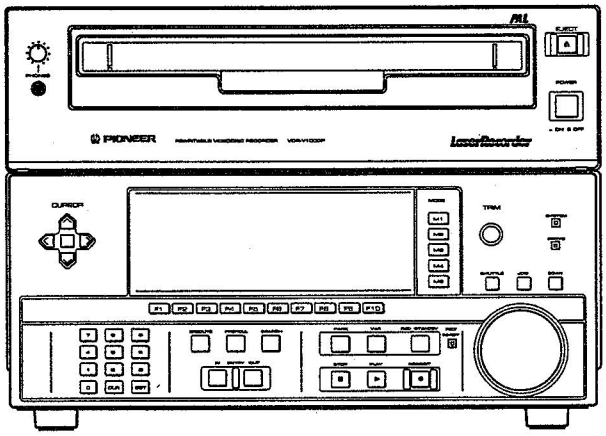
Operating Instructions

REWRITABLE VIDEODISC RECORDER

VDR-V1000P

PAL

LaserRecorder



English

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

"This product complies with the Radio Interference requirements of the EC (European Community) Directive 87/308/EEC."

PIONEER®
The Art of Entertainment

IMPORTANT 1

CAUTION
This product contains a laser diode of higher class than 1.
To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.
Refer all servicing to qualified personnel.

The following caution label appears on your product.

Location:
On the rear panel of the product

CLASS 1 LASER PRODUCT

LASER KLASSE 1

IMPORTANT 2

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 3

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last (make sure that the power switch is off.)

THIS APPARATUS MUST BE EARTHED

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:

Green- and -yellow:	**Earth**
Blue:	**Neutral**
Brown:	**Live**

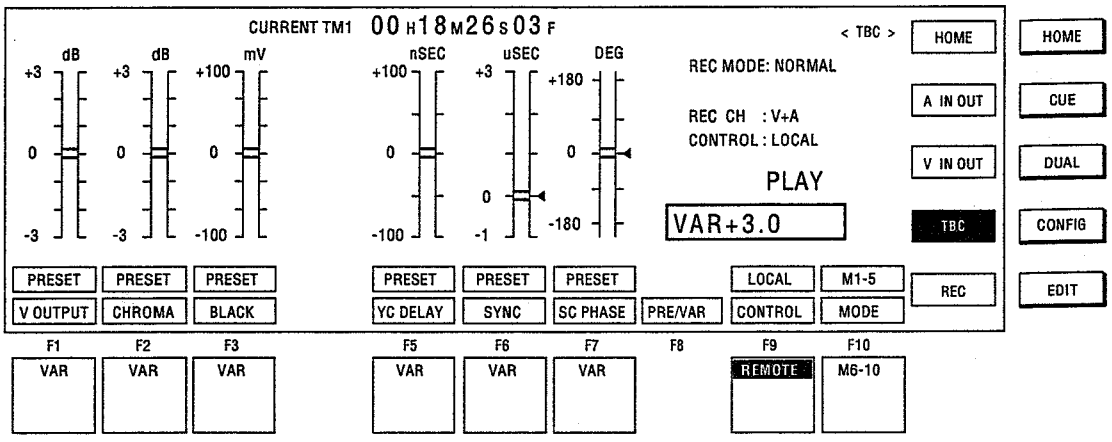
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured making identifying the terminals in your plug proceed as follows:

The wire which is coloured green- and -yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured green or green- and -yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

WARNING!
Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

1-1 SUMMARY OF OPERATION MODES

TBC MODE Mode used to adjust the video output.



F1 V OUTPUT p. 3-7
Output video level adjustment

F2 CHROMA p. 3-7
Output chroma level adjustment

F3 BLACK p. 3-7
Output black level adjustment

The following is common for the F1 to F3 and F5 to F7 keys.
Lighted: Adjustment using the TRIM control and the Preset/Variable switching with the F8 key are enabled.
Not lighted: Fixed.
The above can be alternated the key is pressed.

F4

F5 YC DELAY p. 3-7
Output YC delay adjustment

F6 SYNC p. 3-8
Output sync phase adjustment

F7 SC PHASE p. 3-8
Output subcarrier phase adjustment

The F6 and F7 keys can be subject to the user preset setting.
While the indicator is lighted, press the SET key. The preset marker (◀ mark) to the right of the level meter tracks the level indication position, and this level is set as the preset level.

F8 PRE/VAR p. 3-7
Preset/Variable switching

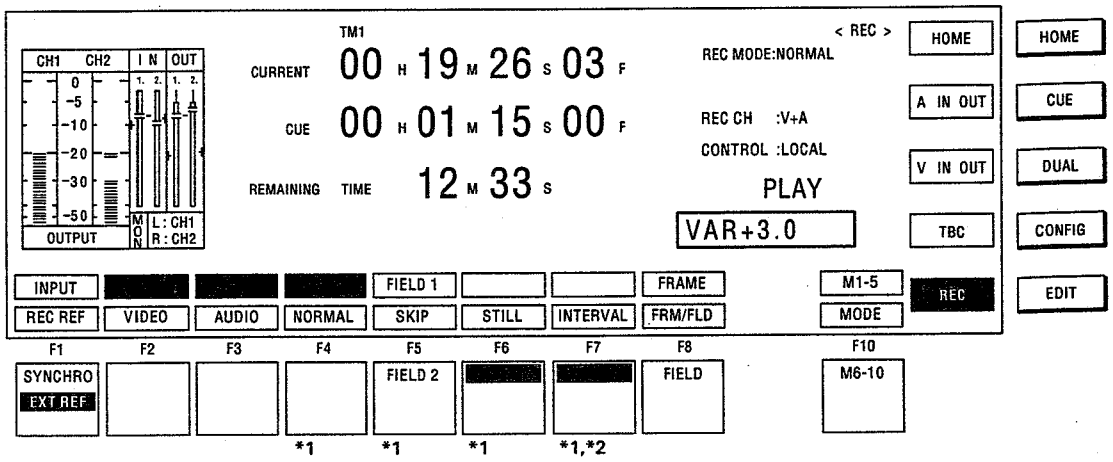
While one of the F1 to F3 and F5 to F7 keys is lighted, press this key to switch between Preset and Variable.

F9 CONTROL p. 3-8
TBC control selection

Switches the TBC control between Local and Remote.
LOCAL: Control from the front panel of the unit.
REMOTE: Control from the remote controller connected to the TBC REMOTE connector.

1-1 SUMMARY OF OPERATION MODES

REC MODE Mode used to set data related to recording.



*1 Only one of the keys can be selected at a time, and its indicator lights (inverted display) while it is selected.
*2 When this mode is selected, the EL display shows "INTERVAL REC PERIOD F". To modify a value, place the cursor to this area and set a new value (refer to p.3-29).

F1 REC REF p. 3-12
Recording reference mode selection *3

INPUT: Executes recording by aligning the disc rotation phase with the input video signal.
SYNCHRO: The frame synchronization function of the built-in TBC is activated. Immediate recording is possible.
EXT REF: Executes recording by aligning the disc rotation phase with the EXT REF signal.

F2 VIDEO p. 3-13
VIDEO CH recording selection

Lighted: Recording enabled.
Not lighted: Recording disabled.

F3 AUDIO p. 3-13
AUDIO CH recording selection

Lighted: Recording enabled.
Not lighted: Recording disabled.

F4 NORMAL p. 3-13
NORMAL REC mode selection

Lighted: Normal recording mode.

F5 SKIP p. 3-28
SKIP REC mode selection

Lighted: Recording mode of only either field. The audio is the same as NORMAL.
FIELD 1: Records fields 1 only.
FIELD 2: Records fields 2 only.

F6 STILL p. 3-28
STILL REC mode selection

Lighted: Still image recording mode.
Recording on a per-frame basis or per-field basis can be selected with the F8 key.

F7 INTERVAL p. 3-29
INTERVAL REC mode selection

Lighted: Records every frame or field after a set interval period.
Recording on a per-frame basis or per-field basis can be selected with the F8 key.
The interval period can be set by displaying the cursor and using the numeric keys and the SET key.

F8 FRM/FLD p. 3-28, 3-29
Frame/field recording selection

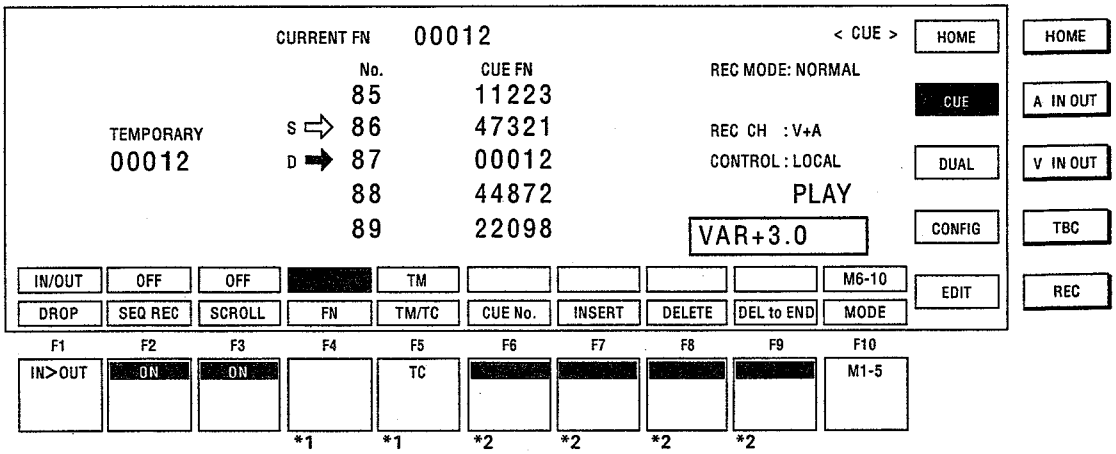
This key is valid only when STILL is selected with the F6 key or INTERVAL is selected with the F7 key.
FRAME: Recording on a per-frame basis.
FIELD: Recording on a per-field basis.

F9

*3 There is a restriction imposed on actual use. Be sure to refer to the text.

1-1 SUMMARY OF OPERATION MODES

CUE MODE Mode used to assign or recall multiple cue points.



*1 Only one of these keys can be selected at a time, and its indicator lights (inverted display) while it is selected.
*2 Only one of these keys can be selected at a time, and its indicator lights while it is selected. The selection is released when the same key is pressed again.

F1 DROP p. 3-25
Cue assignment method selection

IN/OUT: The IN and OUT buttons are independently assigned in the temporary cue and cue.
IN>OUT: Pressing the IN button saves data in the temporary cue, and pressing the OUT button assigns data in the cue, clearing the temporary cue.

F2 SEQ REC p. 3-26
Sequential REC mode ON/OFF

ON: This mode allows easy execution of sequential recording of highlight scenes. The recording start point is automatically assigned in the cue, and the end point is assigned temporarily in the temporary cue. Refer to the text for details. *3

F3 SCROLL p. 3-27
Scroll mode ON/OFF

ON: The cue points can be searched by simply operating the CURSOR up/down keys. This mode is valid only in the stop mode, and released automatically when the operation execution button is pressed.

F4 FN p. 1-20, 3-27
Frame number display selection

Lighted: The frame number is selected as the CUE display content.
99 points of cue data can be stored.

F5 TM/TC p. 1-20, 3-27
Time data display selection

Lighted: The TM (timer) or TC (timecode) data is selected as the CUE display content.
Regardless of TM or TC, a total of 99 points of cue data can be stored.
TM 1/2 and TC 1/2 can be selected in the HOME, TC mode. *4

F6 CUE No. p. 3-27
Cue data recall mode

Lighted: This mode allows to recall cue data to the drop execution line (D ➡).
The cursor appears on the No. display. Enter the cue No. to be recalled with the numeric keys, and press the SET key to execute.

F7 INSERT p. 3-27
Insert mode

Lighted: This mode allows to insert a new cue data area between the drop execution line and the search execution line (S ⇨).
Press the SET key to execute. Data No. 99 will be lost by the execution.

F8 DELETE p. 3-27
Delete mode

Lighted: This mode allows to delete the cue data in the drop execution line.
Press the SET key to execute.

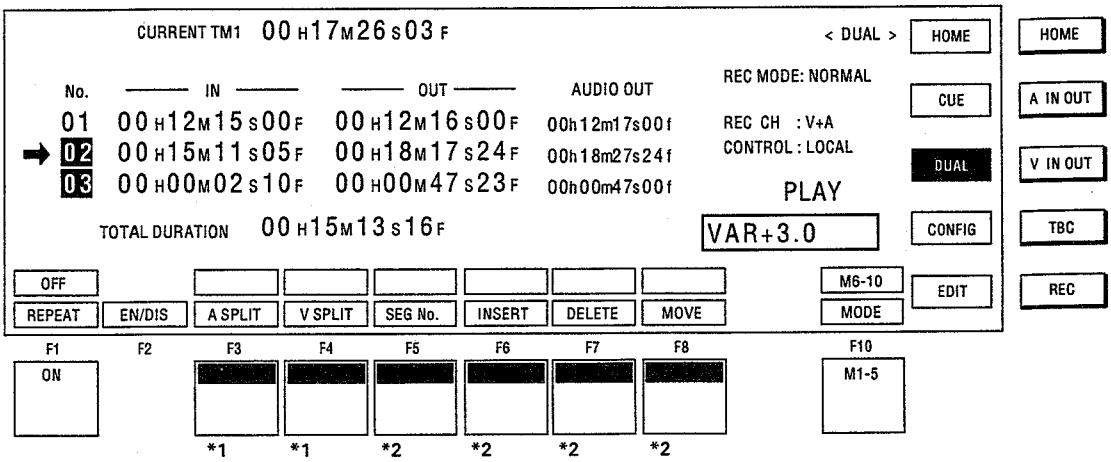
F9 DEL to END p. 3-27
Delete to end mode

Lighted: This mode allows to delete the whole of cue data on the drop execution line and later (with larger cue Nos.).
Press the SET key to execute.

*3 This mode is disabled when the CURRENT display is TC.
*4 When TC is selected, the continuity of the recorded TCs is sometimes not assured. In this case, the search time may be delayed or the target point cannot be focused.

1-1 SUMMARY OF OPERATION MODES

DUAL MODE Mode used to assign the IN/OUT points of dual playback function.



*1 Only one of these keys can be selected at a time, and its indicator lights (inverted display) while it is selected. The selection is released when the same key is pressed again.

*2 Only one of these keys can be selected at a time, and its indicator lights (inverted display) while it is selected. The selection is released when the same key is pressed again.

F1 REPEAT — p. 3-21
Repeat mode ON/OFF

ON: Repeat mode.

F2 EN/DIS — p. 3-21
Segment enabled/disabled switching

Selects whether the segment on the execution line (➡) is to be enabled or disabled. Each press of the key alternates enabled and disabled.
The segment is enabled when the No. display is lighted in inverted display, and it is disabled when the No. display is normal.

F3 A SPLIT — p. 3-21, 3-22
Audio split mode

Lighted: Audio split mode.
The main IN point and main OUT point become the video IN and OUT points respectively, and the sub OUT point becomes the audio OUT point.

F4 V SPLIT — p. 3-21, 3-22
Video split mode

Lighted: Video split mode
The main IN point and main OUT point become the audio IN and OUT points respectively, and the sub OUT point becomes the video OUT point.

F5 SEG No. — p. 3-24
Segment data recall mode

Lighted: This mode allows to recall desired segment to the execution line.
The cursor appears on the No. display. Enter the segment No. to be recalled with the numeric keys, and press the SET key to execute.

F6 INSERT — p. 3-24
Insert mode

Lighted: This mode allows to insert a new segment data area before (above) the execution line.
Press the SET key to execute. Data No. 16 will be lost.

F7 DELETE — p. 3-24
Delete mode

Lighted: This mode allows to delete the segment data on the execution line.
Press the SET key to execute.

F8 MOVE — p. 3-24
Move mode

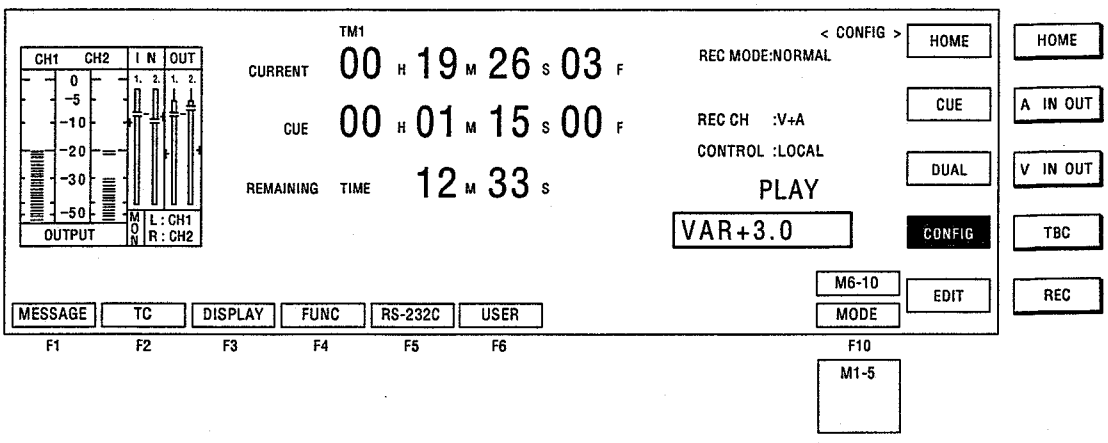
Lighted: This mode allows to change the number of the segment data on the execution line.
The cursor appears on the No. display. Enter the move destination segment No. with the numeric keys, and press the SET key to execute. *3

F9

*3 When Move is executed, the segment numbers from the execution line until the move destination line are incremented or decremented according to the numbers of the two lines.

1-1 SUMMARY OF OPERATION MODES

CONFIG MODE Mode used to switch the operation mode to submodes.



F1 MESSAGE p. 1-14
Switch-over to MESSAGE MODE
Used to display error messages, operation times and software version.
Error content display when the system indicator lights.

F2 TC p. 1-15
Switch-over to TC MODE
Used to set the timecode generator and timer data.
Generator mode selection, LTC and VITC settings.

F3 DISPLAY p. 1-16
Switch-over to DISPLAY MODE
Used to set superimposed image output through the VIDEO 3 connector.
Display content selection, size and position selections.

F4 FUNC p. 1-17
Switch-over to FUNC MODE
Used to set operation functions.
Clutch, buzzer and PARK button enable/disable selection, shuttle speed setting.

F5 RS-232C p. 1-18
Switch-over to RS-232C MODE
Used to set the RS-232C interface conditions.
Baud rate, parity, bit length, termination.

F6 USER p. 1-19
Switch-over to USER MODE
Used to assign or recall front panel key setups.
Recalling factory setup, assignment of three user setups.

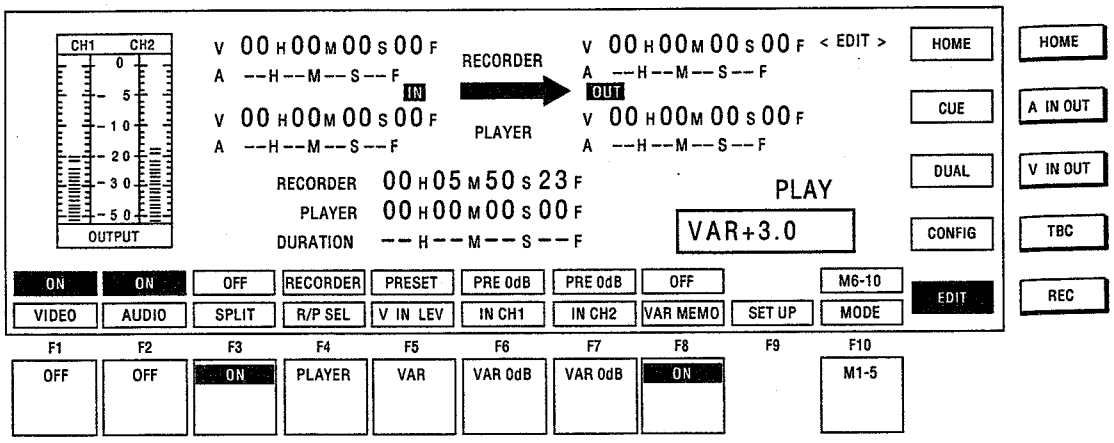
F7

F8

F9

1-1 SUMMARY OF OPERATION MODES

EDIT MODE Mode used for editing using the unit as the recorder.



* To display the INPUT level on the audio level meter, press the F6 or F7 key.

F1 VIDEO p. 3-34
Video recording ON/OFF setting
ON: Recording enabled.
OFF: Recording disabled.

F2 AUDIO p. 3-34
Audio recording ON/OFF setting
ON: Recording enabled.
OFF: Recording disabled.

F3 SPLIT p. 3-34
Split editing ON/OFF setting
ON: Audio split editing mode.
OFF: Split editing disabled.

F4 R/P SEL p. 3-34
Recorder/player selection
Selects the component to be controlled from the front panel of the unit.
RECORDER: Controls this unit itself.
PLAYER: Controls the player connected to the REMOTE 1 OUT connector.

F5 V IN LEV p. 3-31, 3-34
Video input level adjustment
This key is valid when the F1 key is set to VIDEO and the F2 key is set to OFF in the V IN OUT MODE.
Lighted (inverted display): Adjustable with the TRIM control.
Extinguished by pressing again: Fixed

F6 IN CH1 p. 3-31, 3-34
Audio CH 1 input level adjustment

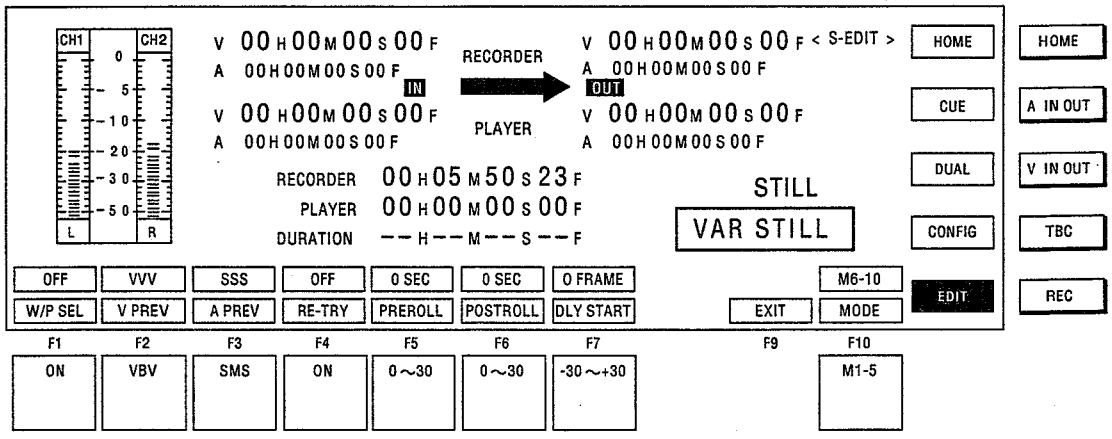
F7 IN CH2 p. 3-31, 3-34
Audio CH 2 input level adjustment
PRE __ dB: Preset (including user preset status)
VAR __ dB: Variable status
└— Attenuator setting value (reference is 0 dB)
Lighted (inverted display): Adjustment with the TRIM control and user preset setting using the SET key are possible.
Extinguished by pressing the key again: Fixed.

F8 VAR MEMO p. 3-35
Variable memory mode ON/OFF
ON: This mode allows to store the variable play mode and perform playback according to it.

F9 SET UP p. 1-13
Transition to S-EDIT MODE
S-EDIT MODE is used for making settings related to editing.
Preview mode selection, pre-/post-roll delay start time setting, etc.

1-1 SUMMARY OF OPERATION MODES

S-EDIT MODE Used for making settings related to editing.



F1 W/P SEL p. 3-38
Switching control of connected player ON/OFF

This button selects whether or not remote control of the player connected to the REMOTE 1 (RS-422A) OUT terminal is possible.

F2 V PREV p. 3-38
Selecting the video preview mode

VVV: The edit area is set to the player's playback video signal.
VBV: The edit area is set to a black screen.

F3 A PREV p. 3-38
Selecting the audio preview mode

SSS: The edit area outputs the player's playback audio signal.
SMS: The edit area is muted.

F4 RE-TRY p. 3-38
Execution of a retry operation

ON: Editing is interrupted, the unit returns to the preroll point and a retry operation is executed.
OFF: Editing continues with the components out of phase.

F5 PREROLL p. 3-39
Setting the preroll time

F6 POSTROLL p. 3-39
Setting the postroll time

During editing, both the preroll time and postroll time can be set from 0 to 30 seconds in 1 second increments.
Press the key so that the indicator lights (inverted display), and set with the TRIM control. Press the key again so that the indicator goes OFF (normal display); the setting will be fixed.

F7 DLY START p. 3-39
Setting the delay start time

The delay time from when the playback command is issued to when this unit starts executing can be set within a range from –30 to +30 frames in single frame steps.
The setting procedure is the same as the F5 and F6 keys.

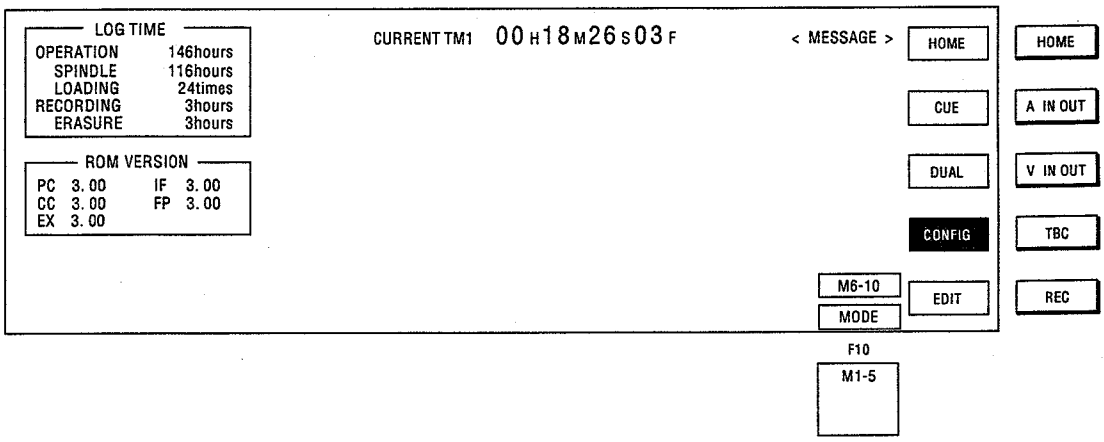
F8

F9 EXIT p. 1-12
Returning to EDIT MODE

Press the F9 (EXIT) key to return to EDIT MODE.

1-1 SUMMARY OF OPERATION MODES

MESSAGE MODE Used to display error messages, operation times and software version.



An error message and error code are displayed while the SYSTEM indicator is flickering, and the command used immediately before the error occurred is displayed on the VIDEO 3 output. (Refer to the sections 1-4 and 3-9.)
Note that these displays disappear when you proceed to the next operation by pressing the operation execution button.

F1

F2

F3

F4

F5

F6

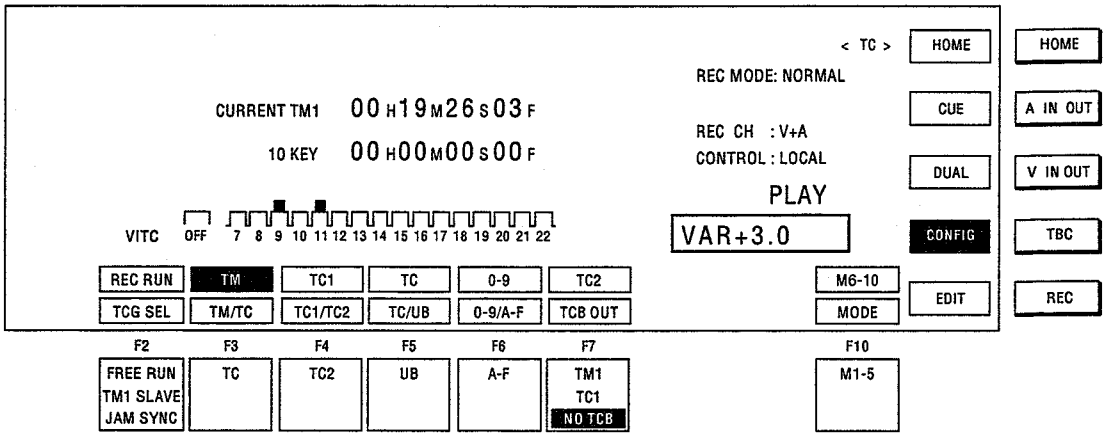
F7

F8

F9

1-1 SUMMARY OF OPERATION MODES

TC MODE Used to set the timecode generator and timer data.



* To set the VITC insertion line, move the cursor to the line display by operating the CURSOR centre and up/down keys. Then, select the desired VITC with the CURSOR left/right keys, and select the line No. with the TRIM control. Press the CURSOR centre key again to remove the cursor from the display. (This mode is effective only when the optional timecode board (VDA-V002) is installed.)

F1

F2 TCG SEL p. 3-18
Timecode generator mode selection

REC RUN: The timecode advances only during execution of recording.
FREE RUN: The timecode advances permanently.
TM1 SLAVE: Locked as slave to TM1.
JAM SYNC: Locked as slave to the TC1 written on the recording start track.

F3 TM/TC p. 1-20, 3-19
CURRENT display selection between TM/TC

TM: TM 1 or TM 2 is displayed. TM 1/2 can be selected in the HOME MODE.
TC: TC or UB of TC 1 or TC 2 is displayed. The TC 1/2 can be selected with the F4 key, and TC/UB can be selected with the F5 key. *1

F4 TC1/TC2 p. 1-20, 3-19
CURRENT display selection between TC 1/TC 2

TC 1: Timecode recorded from the built-in timecode generator.
TC 2: Timecode recorded from the input to the TC IN connector on the rear panel. Timecode board is required for recording of TC 2.

F5 TC/UB p. 1-20, 3-19
CURRENT display selection between TC/UB

TC: Timecode
UB: User's bit

F6 0-9/A-F p. 3-19
Modification of numeric key definitions

A - F: Used when setting values in the user's bit generator.
Keys from 0 to 5 are assigned A to F.

F7 TCB OUT p. 3-20
LTC and VITC output data selection

Selects the LTC output data from the TIME CODE OUT connector and the VITC output data from the VIDEO 1, 2, 3 and Y output connector on the rear panel.
NO TCB is displayed when timecode board is not installed.

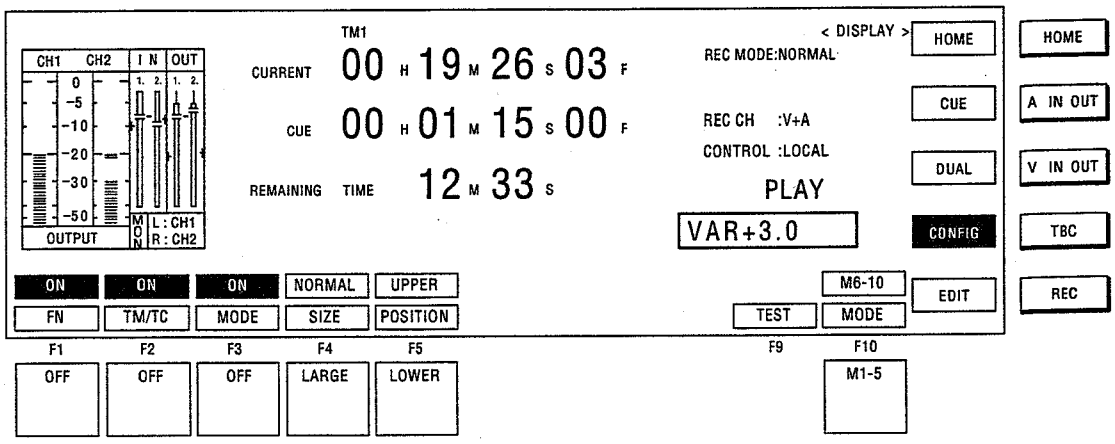
F8

F9

*1 To set data for TM1, TCG1 or UBG1, display the cursor on the 10 KEY area by operating the CURSOR centre and up/down keys, enter the value with the numeric keys, and press the SET key.

1-1 SUMMARY OF OPERATION MODES

DISPLAY MODE Used to set superimposed image output through the VIDEO 3 connector.



F1 FN p. 3-40
Frame No. display ON/OFF
Selects the content to be superimposed on the output video signal from the VIDEO 3 output connector.

F2 TM/TC p. 3-40
TM/TC display ON/OFF
Selects the content to be superimposed on the output video signal from the VIDEO 3 output connector.

F3 MODE p. 3-40
Operation mode display ON/OFF
Selects the content to be superimposed on the output video signal from the VIDEO 3 output connector.

F4 SIZE p. 3-40
Character size selection
Selects the size of the characters to be superimposed on the output video signal from the VIDEO 3 output connector.

F5 POSITION p. 3-40
Display position selection
Selects the position of the characters to be superimposed on the output video signal from the VIDEO 3 output connector.

F6

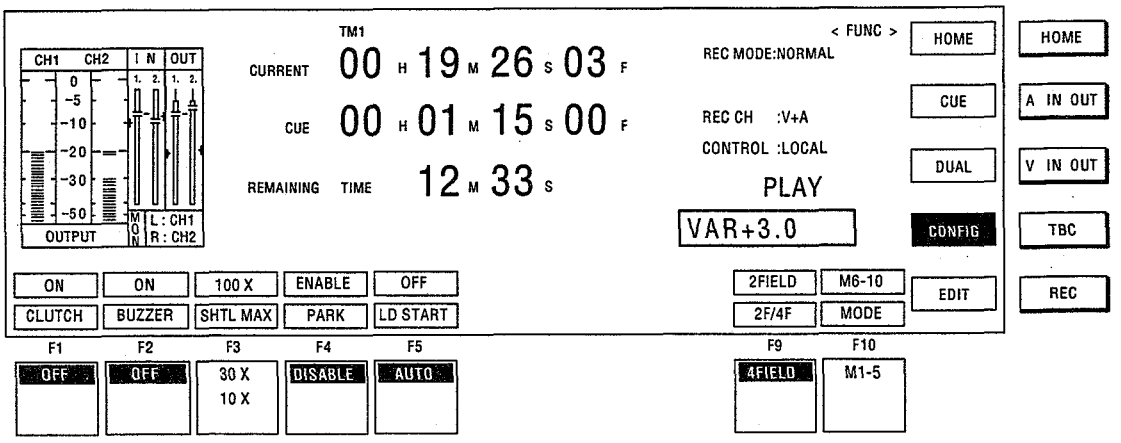
F7

F8

F9 TEST
Transition to test mode
Key for exclusive use by service engineers.

1-1 SUMMARY OF OPERATION MODES

FUNC MODE Used to set operation functions.



F1 CLUTCH
Search dial click ON/OFF

Selects where click positions are provided for the search dial for use in setting the VAR and SHUTTLE playback speed.
ON: Clicks are provided.

F2 BUZZER
Key operation confirmation buzzer ON/OFF

F3 SHTL MAX
Shuttle maximum speed setting

100x: Maximum speed is approx. 100x speed.
30x: Maximum speed is approx. 30x speed.
10x: Maximum speed is approx. 10x speed.

F4 PARK
PARK enable/disable

Selects whether the PARK button and the STDBY OFF command during remote control are enabled or disabled.
ENABLE: Enabled.
DISABLE : Disabled.

F5 LD START
Loading start mode ON/OFF

AUTO : Playback starts automatically after the disc has been loaded. Both the PARK button and STDBY OFF command are disabled.
OFF: Playback does not start automatically.

F6

F7

F8

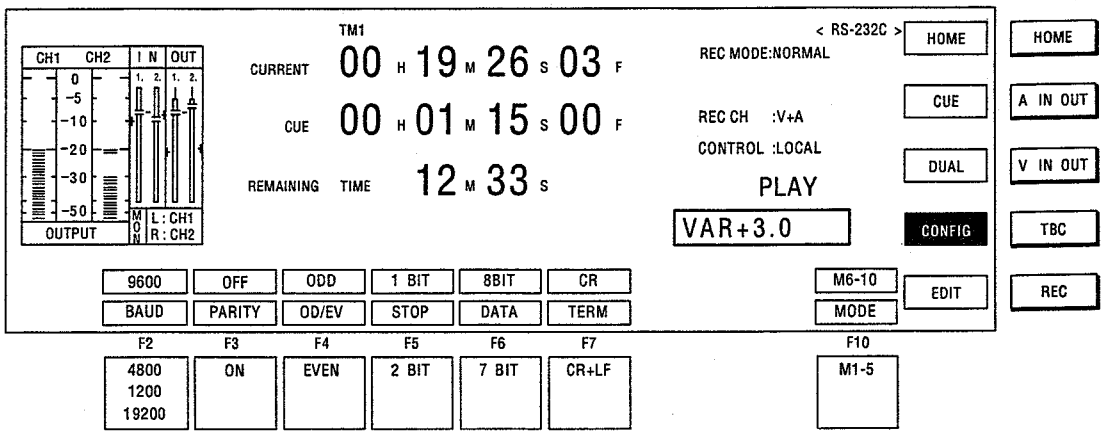
F9 2F/4F p. 3-9
2F/4F servo lock selection

Selects the servo lock mode in recording or playback.
2 FIELD: Locked with 2-field sequence.
4 FIELD : Locked with 4-field sequence. *1

*1 While selecting 4-field sequence, 1st and 2nd fields of the video composite signal are recorded on the odd frame of the TM2 and 3rd and 4th fields are recorded on the even frame. When the 4-field sequence has been selected, the odd and even values of the TM1 and TM2 are not equal to each other, the value of the TM1 is automatically rounded up by 1 frame.

1-1 SUMMARY OF OPERATION MODES

RS-232C MODE Used to set the RS-232C interface conditions.



F1

F2 BAUD
Baud rate selection

The baud rate setting changes every time the key is pressed.

9600 → 4800 → 1200 → 19200 →

F3 PARITY
Parity bit yes/no selection

ON: Parity bit is added.
OFF: Parity bit is not added.

F4 OD/EV
Parity odd/even selection

Effective only when F3 is ON.
ODD: Selects odd parity.
EVEN: Selects even parity.

F5 STOP
Stop bit selection

Press this key to select whether the number of stop bits is 1 bit or 2 bits.

F6 DATA
Data length selection

Press this key to select whether the data length is 8 bits or 7 bits.

F7 TERM
Terminator selection

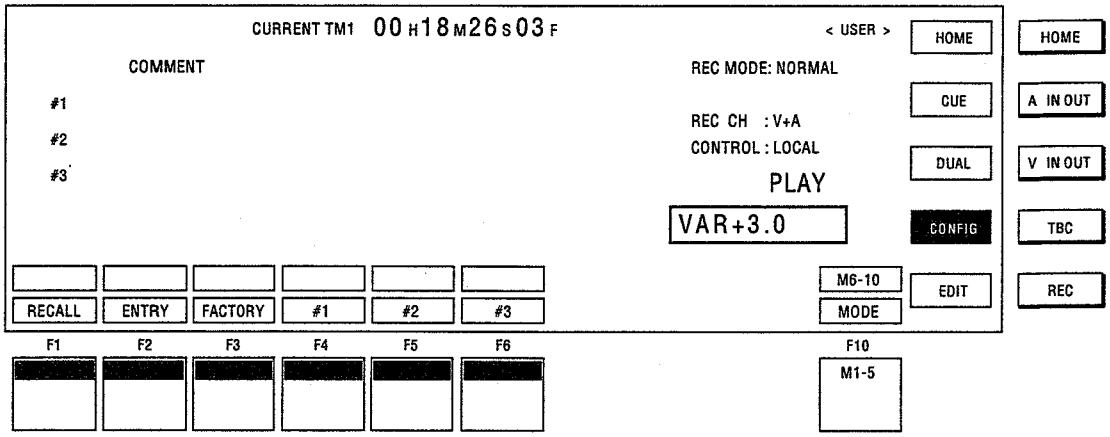
Press this key to select whether the terminator is carriage return alone (CR) or carriage return plus line feed (CR + LF).

F8

F9

1-1 SUMMARY OF OPERATION MODES

USER MODE Used to assign or recall front panel key setups.



F1 RECALL — p. 3-2, 3-42
Setting recall mode
Press this key to light the indicator, then press one of the F3 to F6 keys to light its indicator. Press the EXECUTE button to execute recall. *1

F2 ENTRY — p. 3-42
Setting assignment mode
Press this key to light the indicator, then press one of the F4 to F6 keys to light its indicator, and enter the comment. Press the EXECUTE button to execute the assignment. *1

F3 FACTORY — p. 3-2, 3-42
Factory setting
The function key setting when the unit left the factory is as shown in the EL display of each mode shown in section 1-1 "SUMMARY OF OPERATION MODES".

F4 #1 — p. 3-42
#1 user setting

F5 #2 — p. 3-42
#2 user setting

F6 #3 — p. 3-42
#3 user setting

Press these keys to select the assignment number. When comment entry is required, follow the procedure below.

Comment entry procedure:
Press the F2 key to light the indicator, then press one of the F4 to F6 keys to light its indicator. When the cursor appears in the COMMENT area with the corresponding No., rotate the TRIM control to select one of the numerals, alphabets or symbols, and press the CURSOR centre key to enter it. Enter subsequent characters in order.

F7

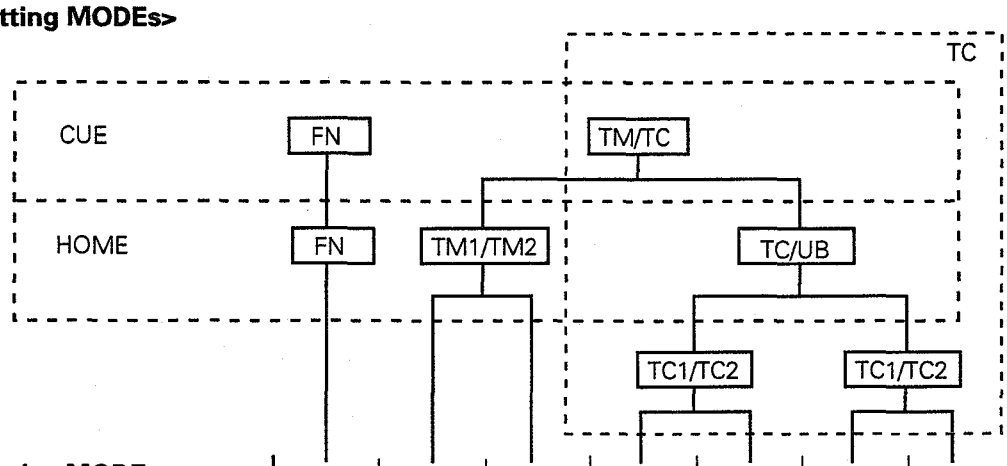
F8

F9

*1 Both recall and assignment operations are enabled only in the PARK and EJECT modes.

1-2 CONTENTS AND SETTING METHODS OF CURRENT DISPLAY IN DIFFERENT MODES

<Setting MODEs>



<Display MODEs>

	FN	TM1	TM2	TC1 R/G	TC2 R/G	UB1 R/G	UB2 R/G *1
HOME A IN OUT REC CONFIG DISPLAY FUNC RS-232C	○	○	○	○	○	○	○
CUE	○	○	○	○	○	—	— *2
DUAL	—	○	○	—	—	—	—
EDIT S-EDIT	—	○	○	—	—	—	— *3
TC	—	○	○	○	○	○	○
Others V IN OUT TBC MESSAGE USER	○	○	○	○	○	○	○

*1:When TC or UB is set, the timecode reader display is automatically switched over to the timecode generator display during REC and EE.
*2:When UB is set, it is automatically switched to the TC when the CUE MODE is entered.
*3:When TC or UB is set, it is automatically switched to the TM when the EDIT MODE is entered.

1-3 LIST OF KEY AND BUTTON CONTENTS IN DIFFERENT MODES

MODE / KEY BUTTON	HOME	A IN OUT	V IN OUT	TBC	REC	CUE	DUAL	CONFIG	EDIT	S-EDIT	MESSAGE	TC	DISPLAY	FUNC	RS-232C	USER	FUNCTION
CURSOR SHIFT	●	●			●	● ● ●	● ●	●	●	●		●	●	●	●		1: Move cursor 2: Scroll cue and segment display 3: Search cue point (Scroll mode)
CURSOR CENTER	●	●			●	●	●	●	●	●		●	●	●	●	●	4: Cursor ON/OFF switching (OFF → Column → (All) → OFF), input data setting. 5: Input alphabetical comment
NUMERIC	●	●			●	●	●	●	●	●		●	●	●	●		6: Input figure on cursor position
CLR	●	●			●	●	●	●	● ●	● ●		●	●	●	●		7: Clear data on cursor position (0 clear) 8: Cancel IN and OUT point assignment
SET	●	● ●		●	●	●	● ●	●	● ●	●		●	●	●	●	●	9: Set input data on cursor position 10: Set as user preset 11: Execution of insertion, deletion, etc. 12: Set data in 10 KEY area as current data.
EXECUTE	●	●	●	●	●	●	● ●	●		●	●	●	●	●	●	●	13: Dual play mode ON 14: Dual play mode OFF. When the mode is changed to EDIT MODE, the dual play mode is turned OFF automatically. 15: Search temporary cue point 16: Preview, review and variable memory playback 17: Assignment or recall of user configuration
PREROLL	●	●			●	●	●	●	●	●			●	●	●		18: Start variable memory storage (VAR MEMO mode) 19: Preroll search of cue point 20: Preroll search of IN and OUT points while cursor is displayed
SEARCH	●	●			●	●	●	●	●	●			●	●	●		21: Search cue point 22: Search IN or OUT point while cursor is displayed
IN	●	●			●	●	●	●	●	●			●	●	●		23: Enter cue, temporary cue, IN point
OUT	●	●			●	●	●	●	●	●			●	●	●		24: Enter cue, OUT point
TRIM		●	●	●					●			●				●	25: Adjust audio and video levels 26: Set preroll, postroll and delay time 27: Select VITC insertion line 28: Select alphabetical comment

1-4 ERROR MESSAGES

ERROR CODES

When the SYSTEM indicator is flashing and the mode is set to the MESSAGE MODE, one of the messages listed below is shown in the EL display.
To correct the problem, try the measure described in the "Treatment" column to the right of the message. If the trouble still remains, check the error code (E00) at the end of message and contact our after-sale servicing department.
As the error cord (E00) provides specific information regarding the error, be sure to tell the correct error code value to the after-sale servicing department. Take care that the unit does not proceed to the next operation while the message is displayed, for this will cause the message display to disappear.
The error codes listed below are also superimposed on the VIDEO 3 output signal.

<Message>	**<Meaning/Treatment>**	
DEW DETECTED **E48, E49**	Meaning: Treatment:	There is a possibility that dew is condensed on the optical head. Eject the disc and leave the unit for an hour or two. When the unit is kept under room temperature, the dew will evaporate and the unit will become usable again.
LOADING NOT COMPLETED **E95**	Meaning: Treatment:	Disc loading has not completed. Check that the disc cartridge shutter is not deformed, a foreign object is not attached, and that the disc model number indicates compatibility with the unit (it should be VDM-V130P), and try loading the disc again.
TRACKING ALARM **E40, E41, E42, E43**	Meaning: Treatment: Treatment: Treatment:	Tracking error occurred during operation. Tracking error may occur if the unit is not installed horizontally; check the installation condition. This unit has possibly been subjected to a shock during operation. Start over and try playback again. If "TRACKING ALARM" is displayed during recording, the video and audio near that point may be distorted. Tracking error may also be caused by a dirty disc. In this case, clean the disc well and try again.
HARD ERROR **E4E, E4F, E99**	Meaning: Treatment:	There is a possibility that a hardware error occurred. The error was possibly caused due to the manner of operation. Check the operating instructions in the operation manual again.
DISC (OR HARD) ERROR **E44, E45, E46, E47, E4A, E4B, E4C, E4D, E50, E97**	Meaning: Treatment:	There is a possibility that a disc-related error occurred. Check if the disc surface is dirty or if there is a foreign object inside or outside the cartridge. Then, to make sure, also try using another disc.

1-4 ERROR MESSAGES

WARNING CODES

In case the data set by the front panel operation or by the remote control via the RS-232C interface is illogical, or when a command that cannot be executed by this unit is given to it, one of the warning codes listed below is superimposed on the VIDEO 3 output signal.
These warning codes are not displayed on the front panel.

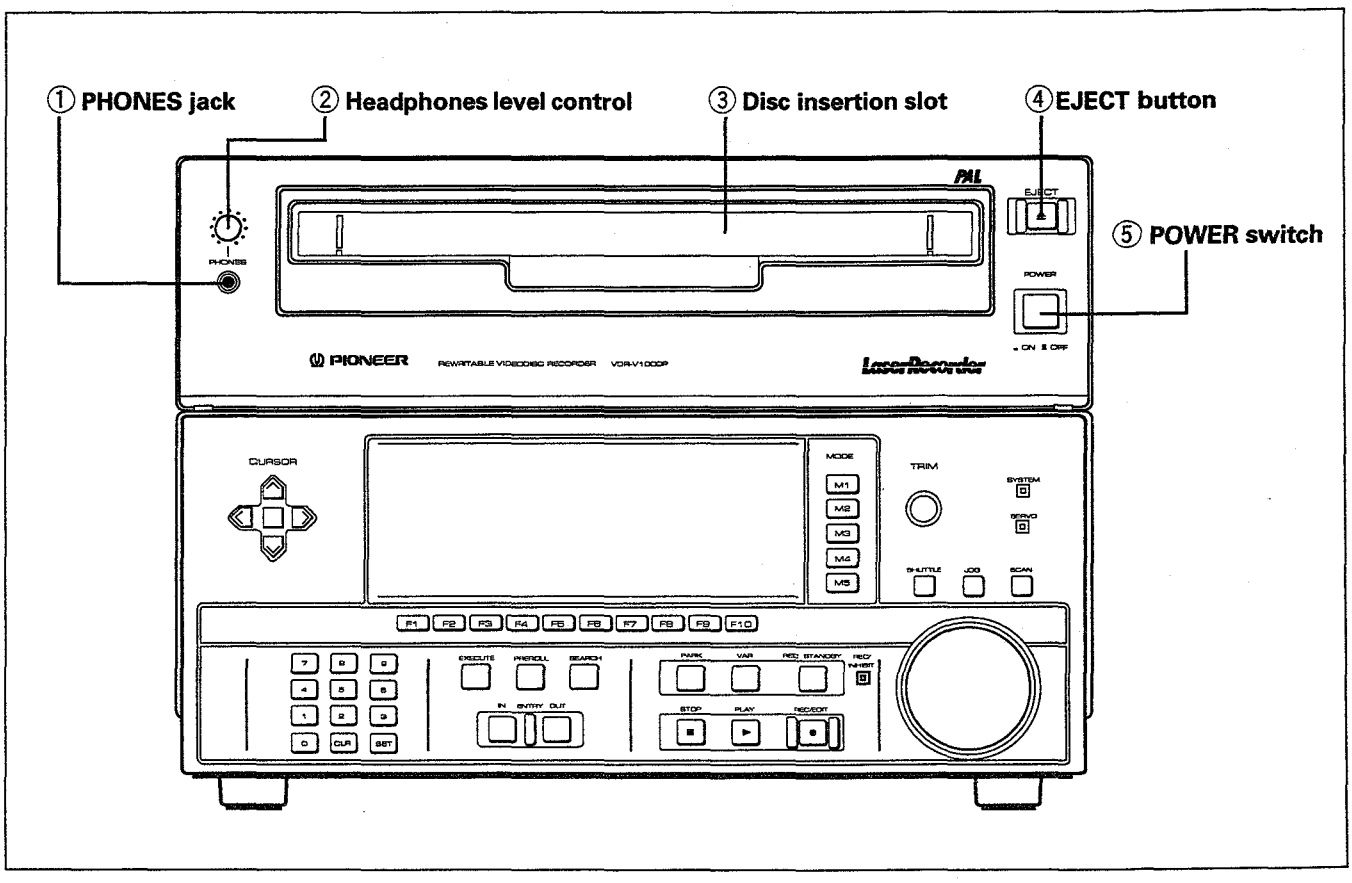
<Code>	<Meaning>
E00	Communication error. Possible causes include penetration of noise in communication line and wrong baud rate setting, etc.
E04	Inappropriate command is received.
E06	Inappropriate data is set. Also displayed when the split time of the DUAL MODE, displayed on the front panel, has been set exceeding the time of the next segment.
E11	The received command cannot be executed because no disc has been loaded.
E12	Time-out occurred before reaching the address specified to be searched. This is displayed in case search cannot complete due to inappropriate time code specification, etc.
E16	Interrupt occurred during command execution because the control mode is changed.
E17	Recording command cannot be executed because the recording system is being started up (while the servo indicator is lighted).

CHAPTER 2 CONTROLS, CONNECTORS AND INDICATORS

2-1 Control panel 2-2
2-2 Rear panel 2-7
2-3 Connections 2-10
2-4 Remote control 2-12

2-1 CONTROL PANEL

Loading panel block



① PHONES jack
When stereo headphones are plugged in, the same audio as the monitor output can be monitored through the headphones. The audio level of the headphones is adjusted with the level control above the jack. The audio level is also interlocked with the level adjusted in the A IN OUT MODE.

② Headphones level control
Turn to adjust the audio level of the headphones.

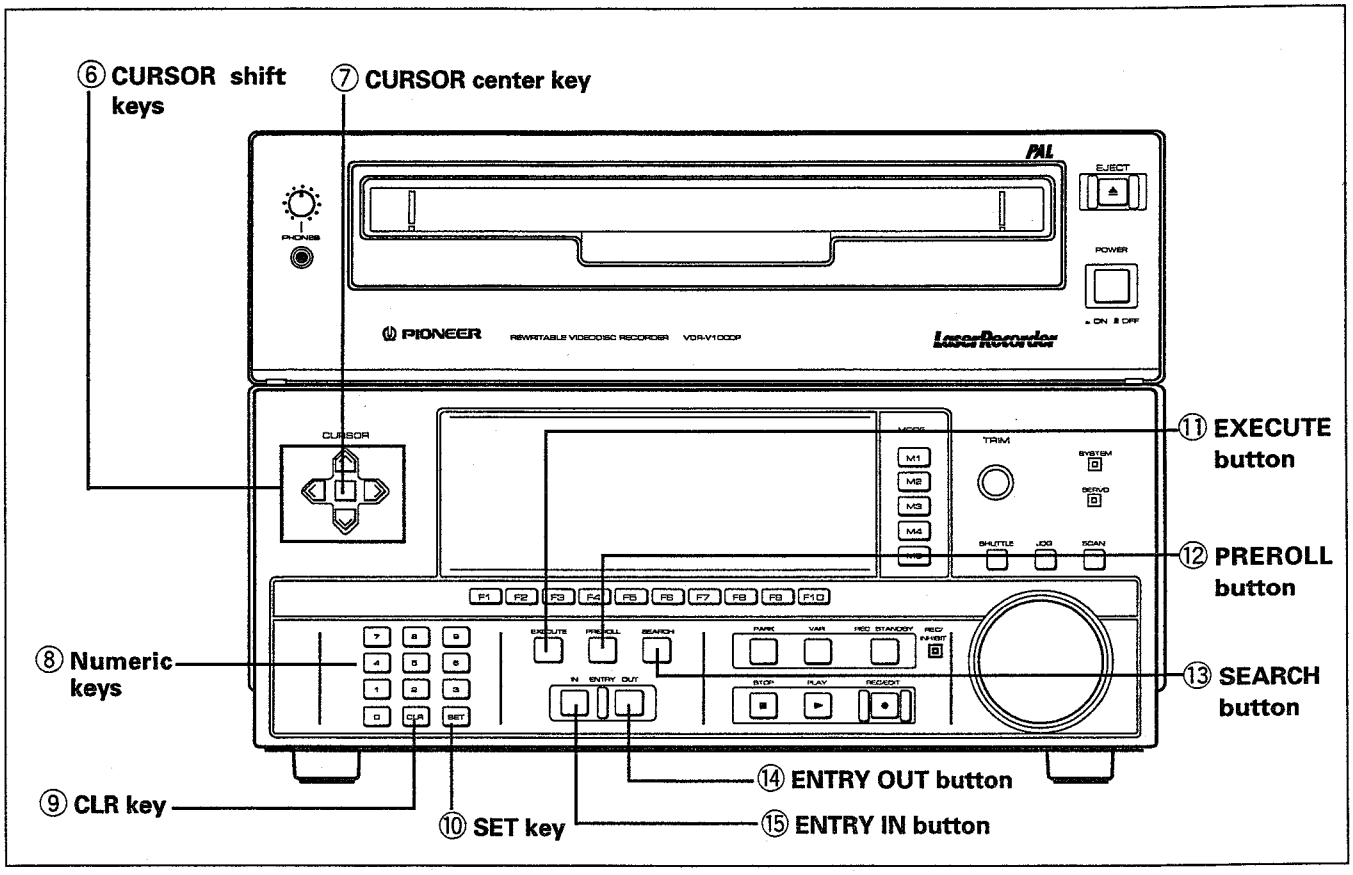
③ Disc insertion slot
When a disc is partially inserted into the slot, it is automatically drawn into the unit. The door is locked while a disc is inserted inside. Do not force the door to open, or it will be damaged.

④ EJECT button
Press the eject the disc. This button is illuminated when no disc is present inside the slot. This button is enabled in any operation mode. If the button is pressed while the disc is rotating, ejection will take about 10 seconds because the disc should be stopped before being ejected.

⑤ POWER switch
Press in to turn the power ON. Press again to turn it OFF. When the power is turned ON, the self-illuminating switches light in sequence, then a screen appears on the EL display.

2-1 CONTROL PANEL

Mode setting key/special operation button block



⑥ **CURSOR shift keys**

⑦ **CURSOR center key**

⑧ **Numeric keys**

⑨ **CLR key**

⑩ **SET key**

⑪ **EXECUTE button**

⑫ **PREROLL button**

⑬ **SEARCH button**

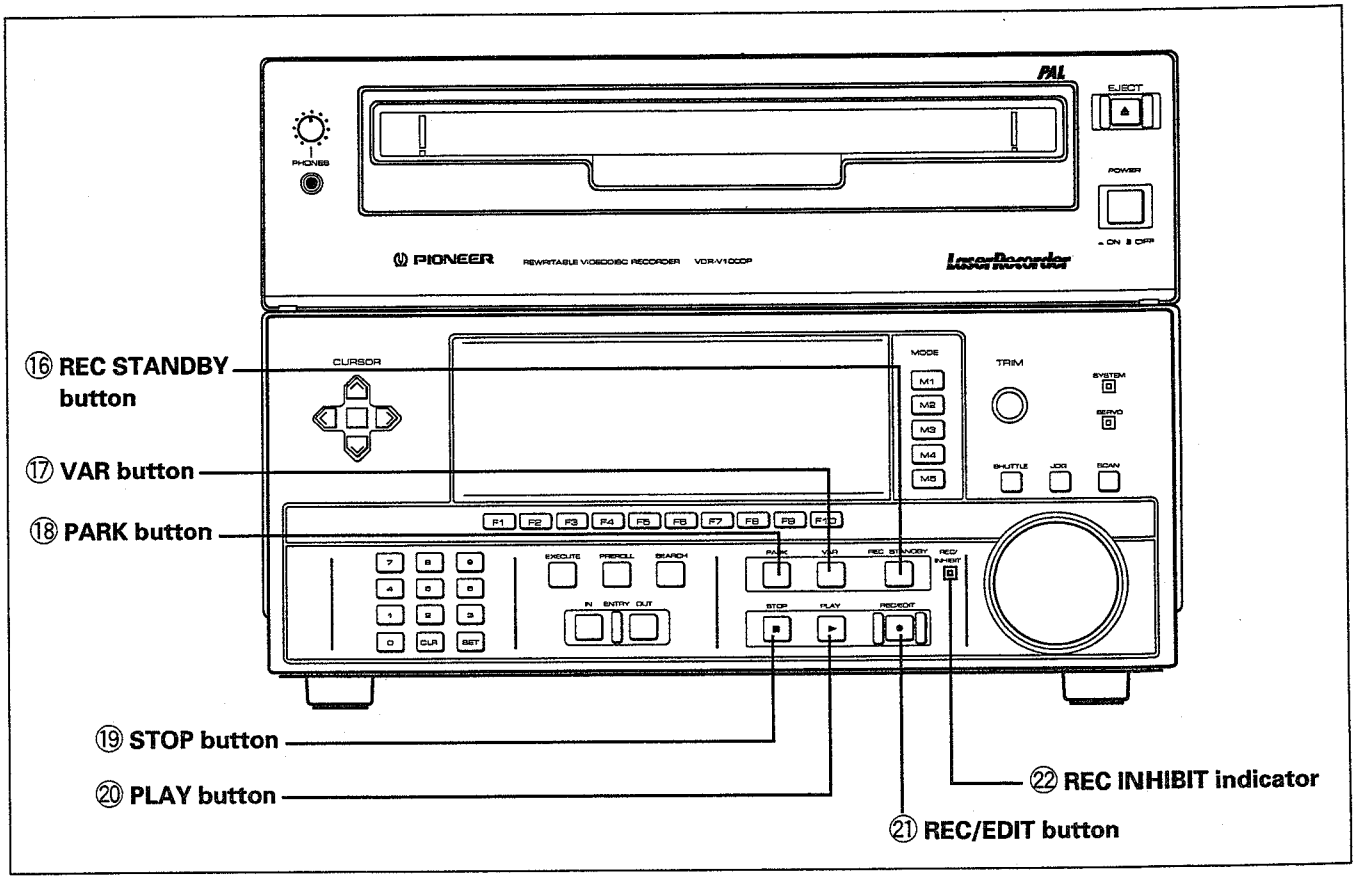
⑭ **ENTRY OUT button**

⑮ **ENTRY IN button**

Refer to the section 1-3 "LIST OF KEY AND BUTTON CONTENTS IN DIFFERENT MODES" (p. 1-21).

2-1 CONTROL PANEL

Operation execution button block



⑯ REC STANDBY button
Press to initiate the record-standby mode. If the input has been selected by F1 (REC REF) in the REC MODE, pressing this button changes the output to the EE mode and changes the disc rotation synchronization phase from the reference signal input through the EXT REF connector (or built-in sync generator in case this input is not present) to the recording video signal input through the VIDEO INPUT connectors. If SYNCHRO has been selected, pressing this button changes the output to the EE mode, but the synchronization phase is provided by the synchronizer function of the video processor so no time is required for disc rotation synchronization.

⑰ VAR button
Press this button to initiate the variable-speed playback mode in a speed range of –1x to +3x of the normal playback speed. If the playback speed has previously been set with the SEARCH dial, playback starts at the preset speed.

⑱ PARK button
Press to stop the disc rotation. To prevent operation mistakes, this button is enabled only when a still, paused image is being displayed (with the STOP button lighted).
This button can be disabled by setting the F4 (PARK) and F5 (LD START) keys in the FUNC MODE to DISABLE or AUTO.

⑲ STOP button
During playback or recording, press to stop the execution of a function other than playback or recording. Pressing the button during playback changes the video to a still image. Pressing the button during recording in INPUT mode initiates the record standby mode, but the output becomes the still image of the playback video. Pressing the button again releases the record standby mode.

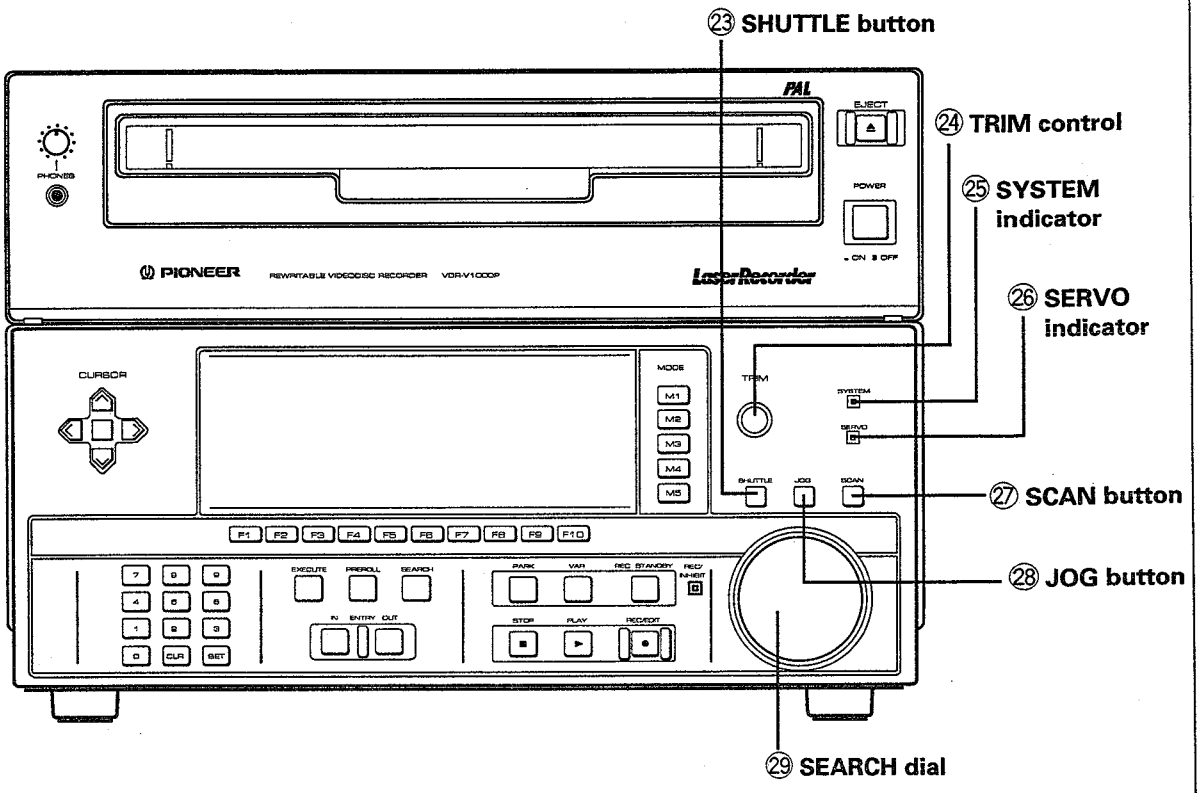
⑳ PLAY button
Press to start normal playback.

㉑ REC/EDIT button
Recording: To start recording, press the PLAY button while holding this button pressed.
Editing: When editing in the EDIT mode, press this button after having set the IN point to start editing.

㉒ REC INHIBIT indicator
This indicator lights when the inserted disc has been set to record inhibit mode.

2-1 CONTROL PANEL

Search dial block



㉓ SHUTTLE button
Press to initiate the shuttle mode. When this button is pressed, the video changes to a still image, and the still image transition speed can be adjusted with the SEARCH dial.
The maximum speed can be set with the F3 (SHTL MAX) key in the FUNC MODE.

㉔ TRIM control
Reffer to the section 1-3 "LIST OF KEY AND BUTTON CONTENTS IN DIFFERENT MODES" (p. 1-21).

㉕ SYSTEM indicator
This indicator flashes to warn that the unit is operating abnormally. When the MESSAGE MODE is entered while this indicator is flashing, the EL display shows an error message and the detailed contents of the error is displayed in VIDEO 3 output.

㉖ SERVO indicator
This indicator lights when the disc rotation starts or stops, or during rotation synchronization pull-in operation.

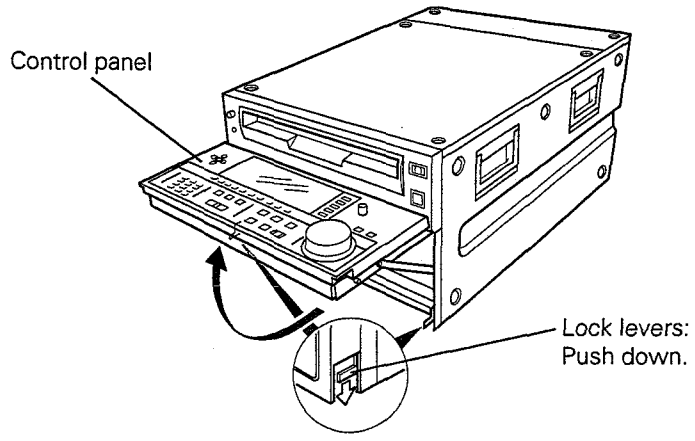
㉗ SCAN button
Press to initiate the scan mode. Scan mode allows you to search for a desired image at high speed by turning the SEARCH dial.
A still image is displayed when the SEARCH dial is not being turned.

㉘ JOG button
Press to initiate the jog mode. Jog mode allows you to advance or search frame by frame by turning the SEARCH dial.
A still image is displayed when the SEARCH dial is not being turned.

㉙ SEARCH dial
Turn to play the video images in jog, shuttle, scan or variable-speed playback mode while varying the playback speed and direction at the same time. Turn the dial clockwise to play or move in the forward direction, and turn it counterclockwise to play or move in the reverse direction.

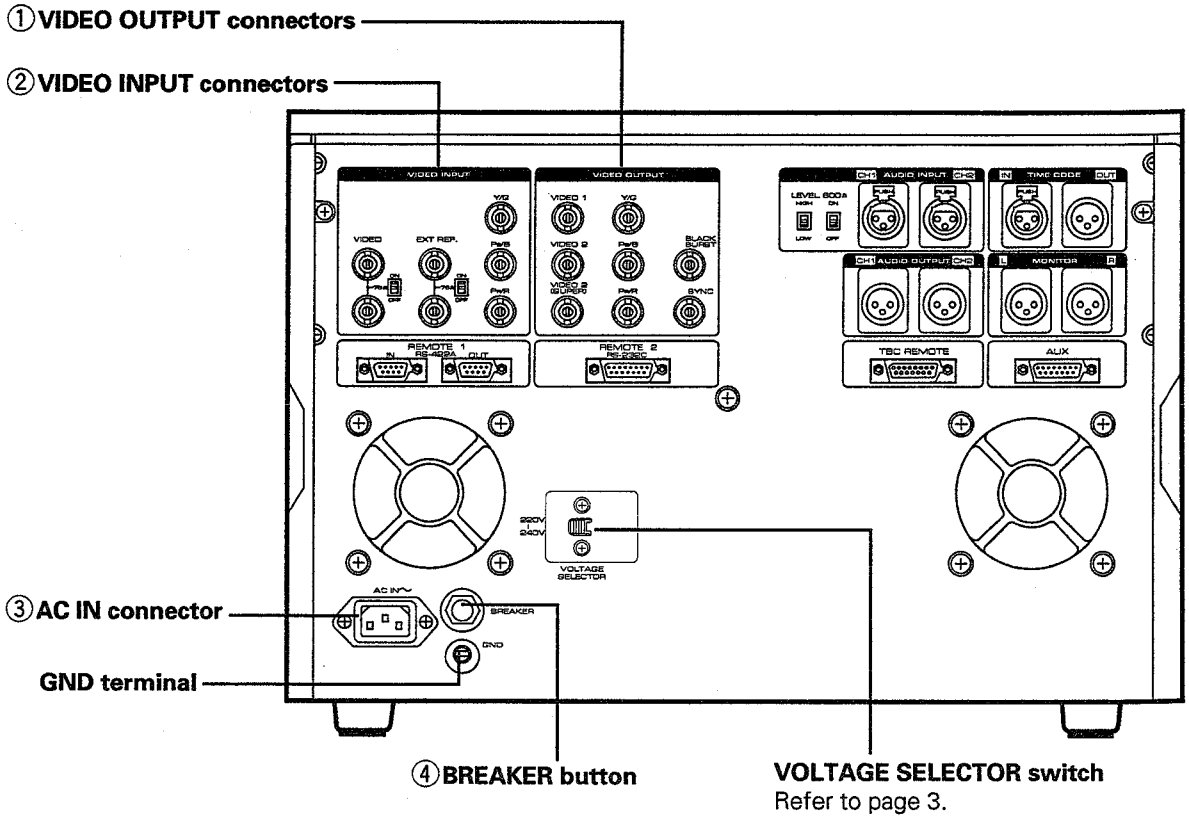
2-1 CONTROL PANEL

The position of the control panel can be changed in three steps.



- Push down the lock levers on both sides and swing the control panel upward.
- When the control panel is released at one of the positions where a click sound is heard, the control panel will stop at that position.
- To return the control panel to the original position, swing it open to the highest position to unlock it, then return it gently downward.

2-2 REAR PANEL



① VIDEO OUTPUT connectors

VIDEO 1, 2 and 3 output connectors (BNC)

These connectors output composite video signals. Connect them to the video input connectors of a video recorder or monitor. With the VIDEO 3 output signal, it is possible to superimpose the frame number, time code, etc.

Y/G, PB/B and PR/R (component video) output connectors (BNC)

The outputs from these connectors are switchable between the Y, PB and PR signals and the analog GBR signals.

BLACK BURST output connector (BNC)

This outputs the signal from the built-in black burst generator.

SYNC output connector (BNC)

This outputs the composite sync signal from the built-in sync generator.

② VIDEO INPUT connectors

VIDEO input connectors (BNC) with 75-ohm termination switch

These connectors accept a composite video signal input. One of the two connectors can be used as through output for bridged connection to other equipment. In this case, set the 75-ohm termination switch to OFF.

EXT REF. input connectors (BNC) with 75-ohm termination switch

These connectors accept external reference video or composite sync signal input.
One of the two connectors can be used as a through output for bridged connection to other equipment. In this case, set the 75-ohm termination switch to OFF.

Y/G, PB/B and PR/R (component video) input connectors (BNC)

Input terminals for the Y, PB and PR signals or the analog GBR signals.

③ AC IN connector

This is the input connector of AC mains power.

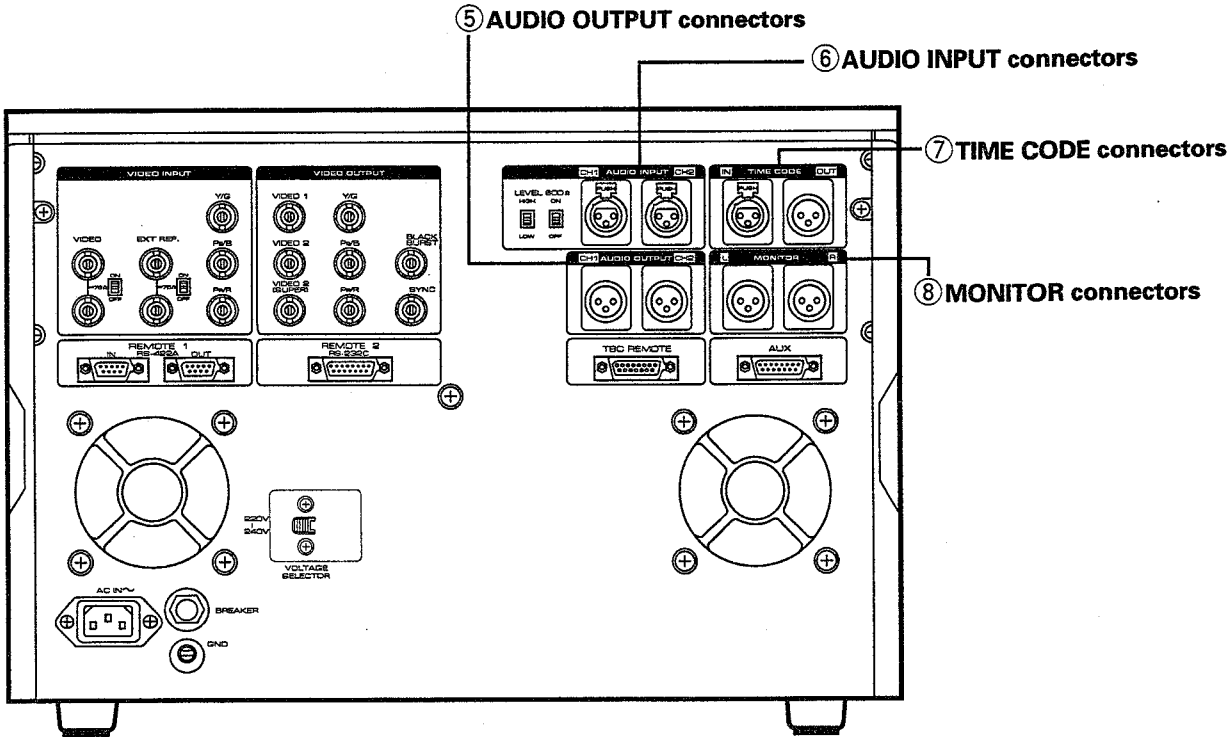
④ BREAKER button

Circuit breaker for the power supply primary circuit.

In case the circuit breaker is turned OFF

The BREAKER button comes out and the primary side of the power supply is turned OFF. Press the POWER switch to OFF and consult your nearest after-sale service agent.

2-2 REAR PANEL



NOTE:
The pin layout of audio input/output connectors is: pin 1 GND, pin 2 HOT, pin 3 COLD.

⑤ AUDIO OUTPUT connectors

AUDIO OUTPUT CH1/CH2 connectors (XLR 3-pin, male)
These output the recorded audio.

⑥ AUDIO INPUT connectors

LEVEL switch
Set this switch according to the audio input level at the AUDIO INPUT connectors.
HIGH: +4 dBm
LOW: –20 dBm

600-ohm termination switch
Set this switch according to the input impedance.

AUDIO INPUT CH1/CH2 connectors (XLR 3-pin, female)
These accept the audio input.

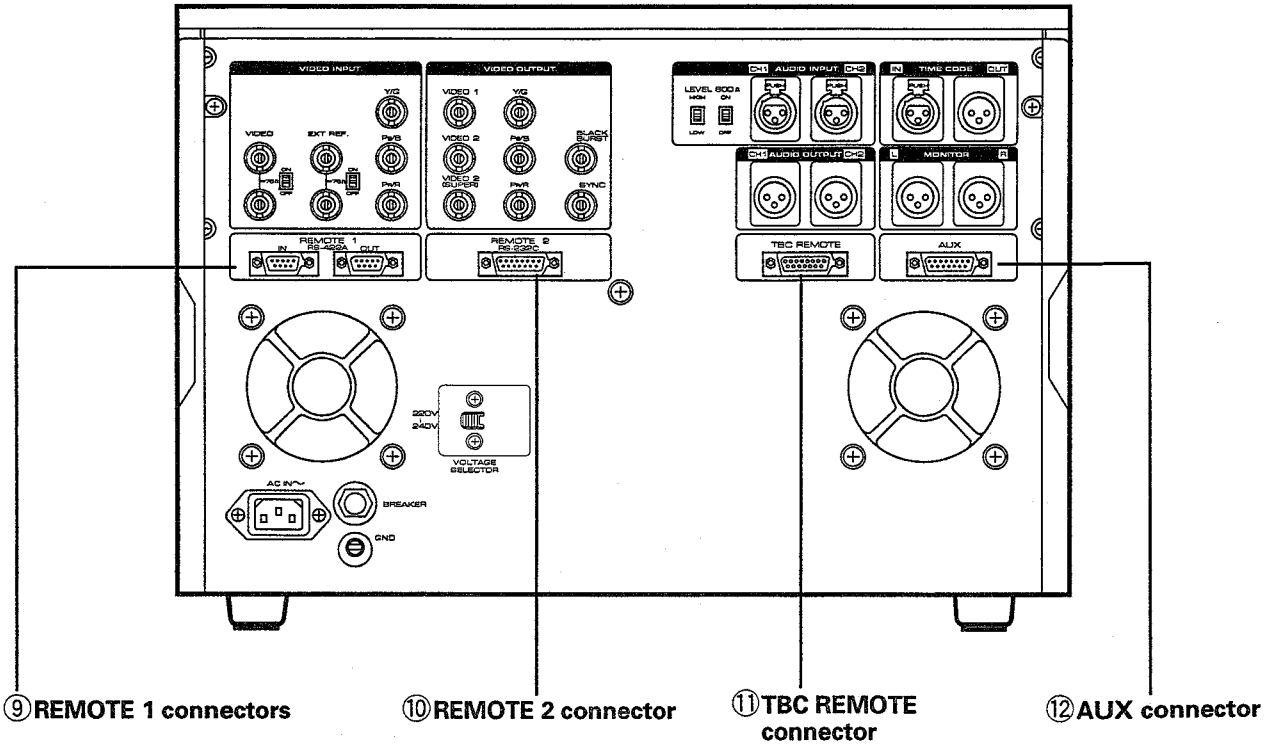
⑦ TIME CODE connectors

TIME CODE IN/OUT connectors (XLR 3-pin, female/male)
These connectors are valid only when the optional time code board (VDA-V002) is installed.
IN connector: By connecting this to the time code output of an external time code generator or a video recorder, the time code can be input and recorded onto the time code area on the disc.
OUT connector: This outputs the time code read from the disc. During recording, it outputs the time code input from the TIME CODE IN connector or generated from the built-in time code generator.

⑧ MONITOR connectors

MONITOR L/R connectors (XLR 3-pin, male)
The audio channel monitored through these connectors can be selected in the A IN OUT MODE using the F8 (MON L) and F9 (MON R) keys.

2-2 REAR PANEL



⑨ REMOTE 1 connectors

REMOTE 1 IN/OUT connectors (RS-422A: 9-pin, female)

When an editor or video recorder equipped with a 9-pin serial interface is used, connect it to one of these connectors using a 9-pin remote control cable.

⑩ REMOTE 2 connector (RS-232C: 15-pin, female)

For external control using a computer or controller, connect to this connector using a 15-pin interface cable (optional).

⑪ TBC REMOTE connector (15-pin, male)

Connect a remote control unit, etc., for remote control of the built-in TBC.

NOTE:

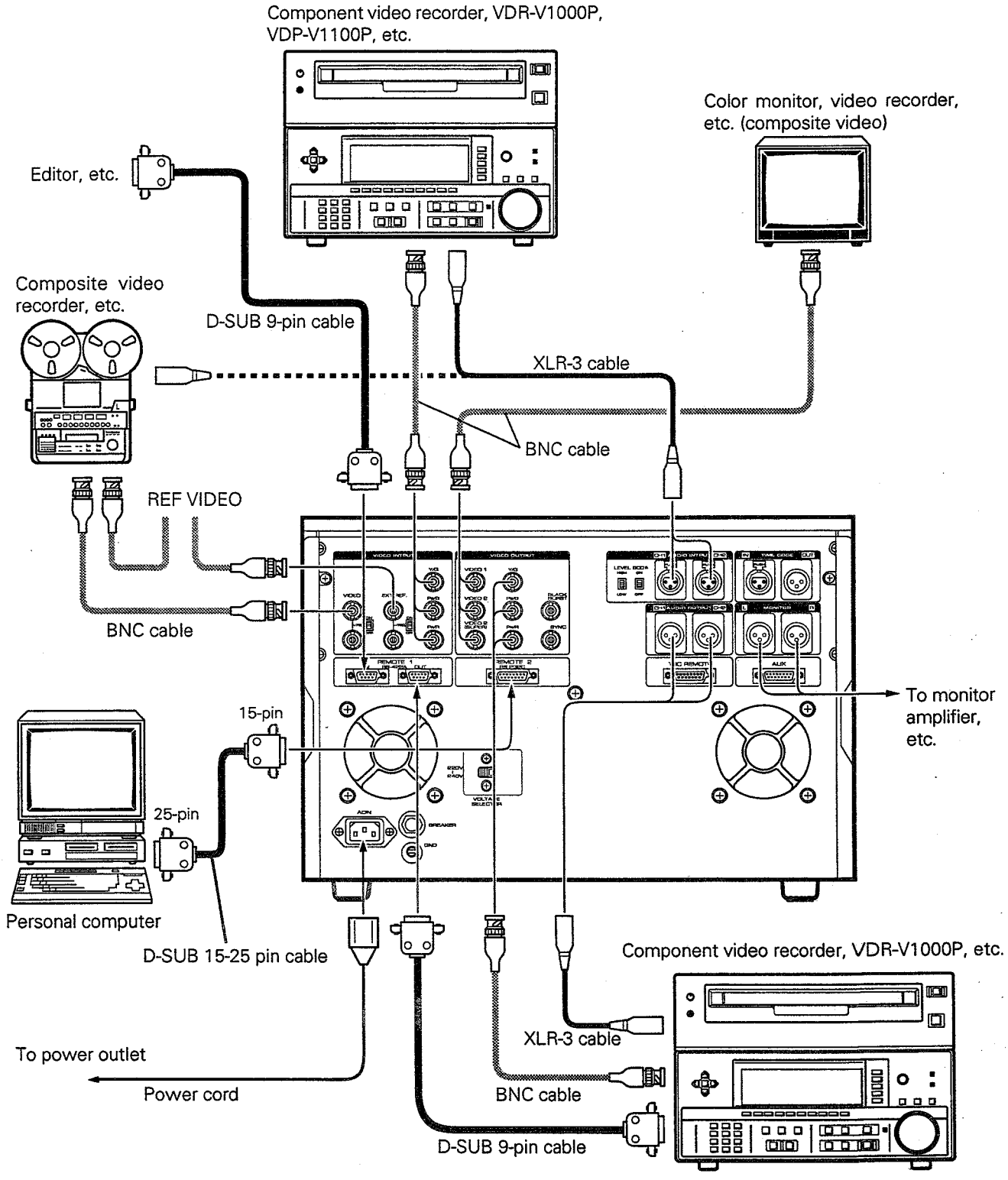
Always be sure to turn the power OFF before connecting a cable to this connector.

⑫ AUX connector (15-pin, female)

Provided for future system expansion.

2-3 CONNECTIONS

Connection example



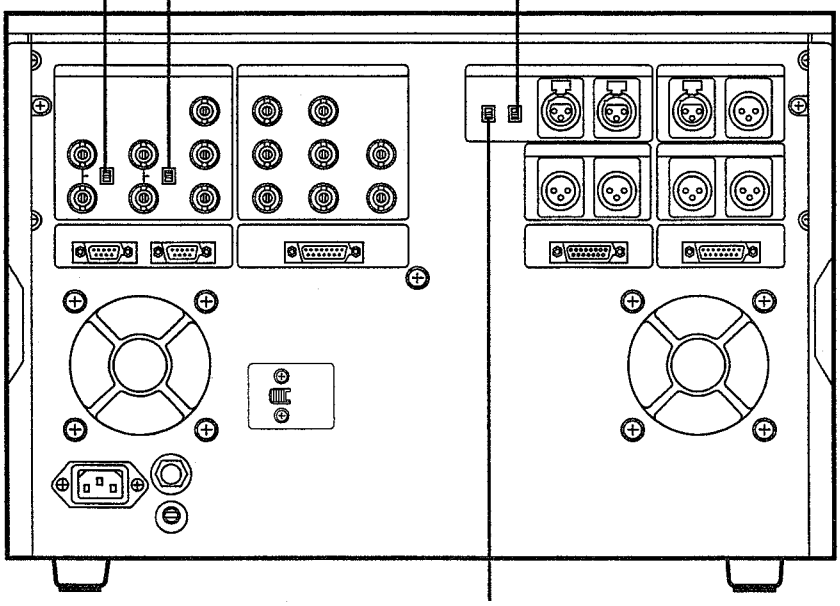
2-3 CONNECTIONS

Rear panel switch setting

EXT REF. 75-ohm termination switch
- Normally → ON
- In case of bridged connection of reference signal → OFF

VIDEO INPUT 75-ohm termination switch
- Stand-alone use or terminal machine in a bridged connection → ON
- Bridged connection → OFF

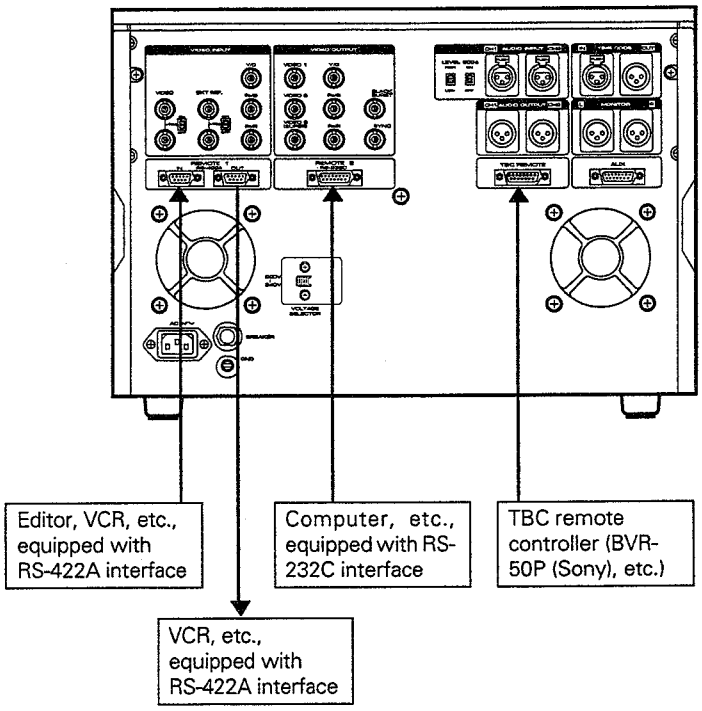
600-ohm termination switch
Select the proper impedance for the audio input.
- Balanced input (600-ohm input) → ON
- Unbalanced input (high-impedance input) → OFF



LEVEL switch
- Input from audio equipment with small output level → LOW
- Input from +4 dBm equipment → HIGH

NOTE:
External Reference Input
The EXT REF input signal is used as the reference for the built-in sync generator. It can also be used as the sync input in the GBR input mode. When the EXT REF input is not supplied, sync generation is switched automatically to internal sync and the built-in sync generator is operated. The sync generator output is used as the reference for the reproduced TBC for the disc rotation during playback. If the synchronizer function for recording has been turned ON, the same is also applied during recording. (In normal recording, the disc is synchronized with the sync signal in the input video signal.) The output from the sync generator is permanently output as the BB (black burst) and SYNC (composite sync) signals.
The level of the signal supplied as the EXT REF signal should be switched depending on whether it is of the video level (black burst, etc.) or the composite sync level (V IN OUT mode). Be sure to use a stable, standard sync signal as the EXT REF input.

2-4 REMOTE CONTROL


Editor, VCR, etc., equipped with RS-422A interface
Computer, etc., equipped with RS-232C interface
TBC remote controller (BVR-50P (Sony), etc.)
VCR, etc., equipped with RS-422A interface

This unit has four remote control connectors as described below.

REMOTE 1 IN (RS-422A)
Used for remote control from an editor, etc.
In HOME MODE, set the F9 (CONTROL) key to REMOTE, and use the F8 (REMOTE) key to select from the following two modes.
422 NORM: This unit returns the status.
422 SPCL: This unit does not return the status.

REMOTE 1 OUT
1. **In case this unit controls other units such as VCR:**
   In S-EDIT MODE, press the F1 (W/P SEL) key to ON.
   In EDIT MODE, set the F4 (R/P SEL) key to PLAYER.
2. **In case several units including this unit are controlled with the same commands:**
   In HOME MODE, set the F9 (CONTROL) key to REMOTE, and set the F8 (REMOTE) key to 422 NORM or 422 SPCL. The commands input to the IN connector is through-output at the OUT connector.

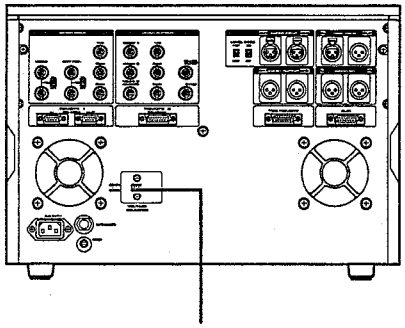
NOTE:
When several units are connected, only one unit shall be capable of returning the status.

REMOTE 2 (RS-232C)
Used for remote control from a computer, etc.
In HOME MODE, set the F9 (CONTROL) key to REMOTE, set the F8 (REMOTE) key to RS-232C, and set constants on the RS-232C MODE.

TBC REMOTE
Used for remote TBC control.
In TBC MODE, set the F9 (CONTROL) key to REMOTE.

VOLTAGE SELECTOR switch

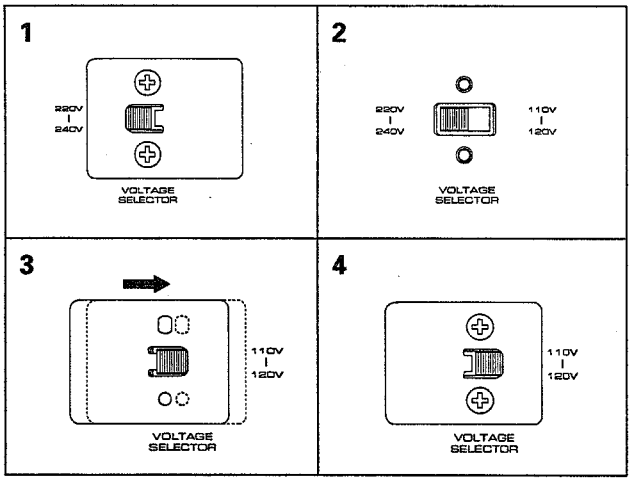
Position:
Rear panel.



VOLTAGE SELECTOR switch

Operation procedure

1. Disconnect the mains cord.
2. Remove the two screws fixing the switch cover (black sheet metal) and remove the switch cover. (Illustration 2)
3. Rotate the switch cover by a half turn, insert the bend section into the gap on the left of the switch knob, and slide toward the right until it stops. (Illustration 3)
4. Secure the switch cover with the two screws. (Illustration 4)



NOTE:
The above procedure and illustrations apply to the case when switching the supply voltage from 220-240 V to 110-120 V.

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SAFETY PRECAUTIONS

In case of abnormality
If the unit generates abnormal noise or odor during operation, immediately turn the power switch OFF and unplug the power cord from the power outlet. Consult your dealer or nearest after-sales service agent to have the unit inspected.

Do not disassemble
This unit incorporates high-voltage parts. To avoid risk of electric shock, do not attempt to check or modify the inside by opening the cabinet. Performance degradation or malfunction resulting due to the user's modification is not covered by our warranty.

When the unit is not to be used for a long period of time
Turn the power switch OFF and unplug the power cord from the power outlet for safety. Otherwise, an unexpected accident may cause a fire hazard.

Avoid water or foreign objects
Do not insert or drop a metallic object such as a hair pin, nail or coin or a flammable object such as a match into the ventilation hole or other opening of the unit, as this may cause malfunction, fire hazard or electric shock. If a foreign object or water enters the unit, consult your dealer or nearest after-sales service agent to have the unit inspected.

Do not damage the power cord
When plugging or unplugging the power cord, be sure to hold the plug. Do not pull the cord or touch the power cord with wet hands, as this may cause a short-circuit or electric shock.
Also do not distribute the power cord below the unit or a piece of furniture or between objects, and do not tie a knot by connecting with another cord or leave in a place where people circulate frequently, as this may damage the cord and cause an electric shock or fire hazard.

Use only the specified disc
This unit can use only the VDM-V130P rewritable videodisc marketed by PIONEER. Never attempt to use another type of disc.
If dirt or fingerprints are on the disc surface, the recording or playback performance may be degraded. Wipe any dirt from the disc using a soft cloth.

INSTALLATION PRECAUTIONS

When the unit is stacked above or below another system component or mounted on a rack, some measures should be taken to prevent the internal temperature from rising. For rack mounting, always be sure to use the VDA-V001 VDR unit rack mount kit.

NOTES ON INSTALLATION

■ Install the unit in a stable place
The unit should be operated in a horizontal, stable position. Do not install the unit in a place which is subject to vibrations or is unstable.

■ Do not place a heavy object on the unit
Do not place a heavy object on the unit.

■ Avoid high temperature and humidity
Do not install the unit in a place subject to direct sunlight or a spot light or near heating equipment to avoid adverse effects on the cabinet or internal parts. Do not install the unit in a place with excessive humidity or dirt to prevent malfunction.
Also, avoid installing the unit in a place subject to soot, vapor, heat or water drops.

■ Ensure proper ventilation of the unit
Never block the two ventilation fans in the rear panel. Always be sure to ensure ventilation behind the fans when installing the unit.

NOTE ON CONDENSATION

If the unit is transported from cold outdoors in winter to a heated room or if the temperature of the room where the unit is installed is increased suddenly, dew may condense on the mechanisms or lenses inside the unit.
In such a case, leave the unit at normal room temperature for an hour or two, depending on the degree of condensation; the condensation will disappear and operation will be possible again.
To prevent condensation in the winter, it is recommended to increase the room temperature gradually before turning the power of the unit ON.
A phenomenon similar to condensation may also occur in summer if the unit is exposed directly to wind from an air conditioner. In such a case, change the installation position of the unit.

NOTE ON TRANSPORTATION

When transporting the unit, be careful so that it is not subjected to vibration or shock and that it is not dropped. Also take care that the unit is not subjected to heat or moisture during transportation.
Be sure to remove the disc before transporting the unit. If it is transported with a disc left inside, the disc or the internal mechanisms may be damaged.

SPECIAL CAUTION

Do not move the unit during recording or playback.
The disc rotates at a high speed (1500 rpm) during recording and playback. If the unit is lifted or moved during operation, the disc may be damaged.
Be sure to remove the disc before attempting to move the unit.
Also remove the disc before lifting and transporting the unit.

FEATURES

Component recording for high-quality, high-definition video
Video recording uses the component, timebase compression format. As the brightness and color difference component signals are recorded separately in independent areas, high-definition video equivalent to video recorders in broadcast stations can be obtained without cross-modulation between signals.

Audio insertion
Audio recording uses the PCM format providing a dynamic range of 85 dB. Similar to the video signal, the audio signal is also timebase compressed and recorded in an independent area from the video signal, so audio insertion is possible just like when using a video recorder.

Two optical heads for overwriting and dual-head playback operations
Two independent heads are used for erasure and recording so that overwriting (for which erasure and recording are performed simultaneously) is possible. By using both optical heads as play heads, making them perform independent search operations and switching their outputs alternately, dual-head playback is possible without any blank intervals due to searching.

Very high-speed searching using newly developed separated optics
Separate optics are adopted in which only the tip of each optical head is driven independently by a linear motor. Instantaneous search is possible due to the very high access speed.

Versatile special playback features proper to videodisc
The videodisc makes possible various special playback features, including pause, forward/reverse frame advance, noiseless multi-speed playback between +3x and –1x speeds and jog shuttle dial operations, in addition to the normal playback and stop operations. Direct search is possible by cuing desired positions during recording or playback.

Multi-format-compatible video input/output
Video input/output signals are compatible with multiple formats including composite video, $Y P_B P_R$ and GBR, allowing the optimum selection for your video equipment.

Timebase corrector provided as standard also for the recording system
The built-in TBC allows direct recording from a consumer VCR model without using an external TBC. The TBC remote connector also allows wired remote control from an external unit.

Various frame-by-frame (field-by-field) recording
The non-contact recording/playback system using laser light allows frame-by-frame recording without worrying about wearing the recording medium. In addition to direct frame recording, an interval recording function for low-speed recording is also provided.

Large-capacity user data
An area of 1 MB for use by the user data RAM is reserved on the innermost position on disc . The user data can be recorded or reproduced through the RS-232C interface.

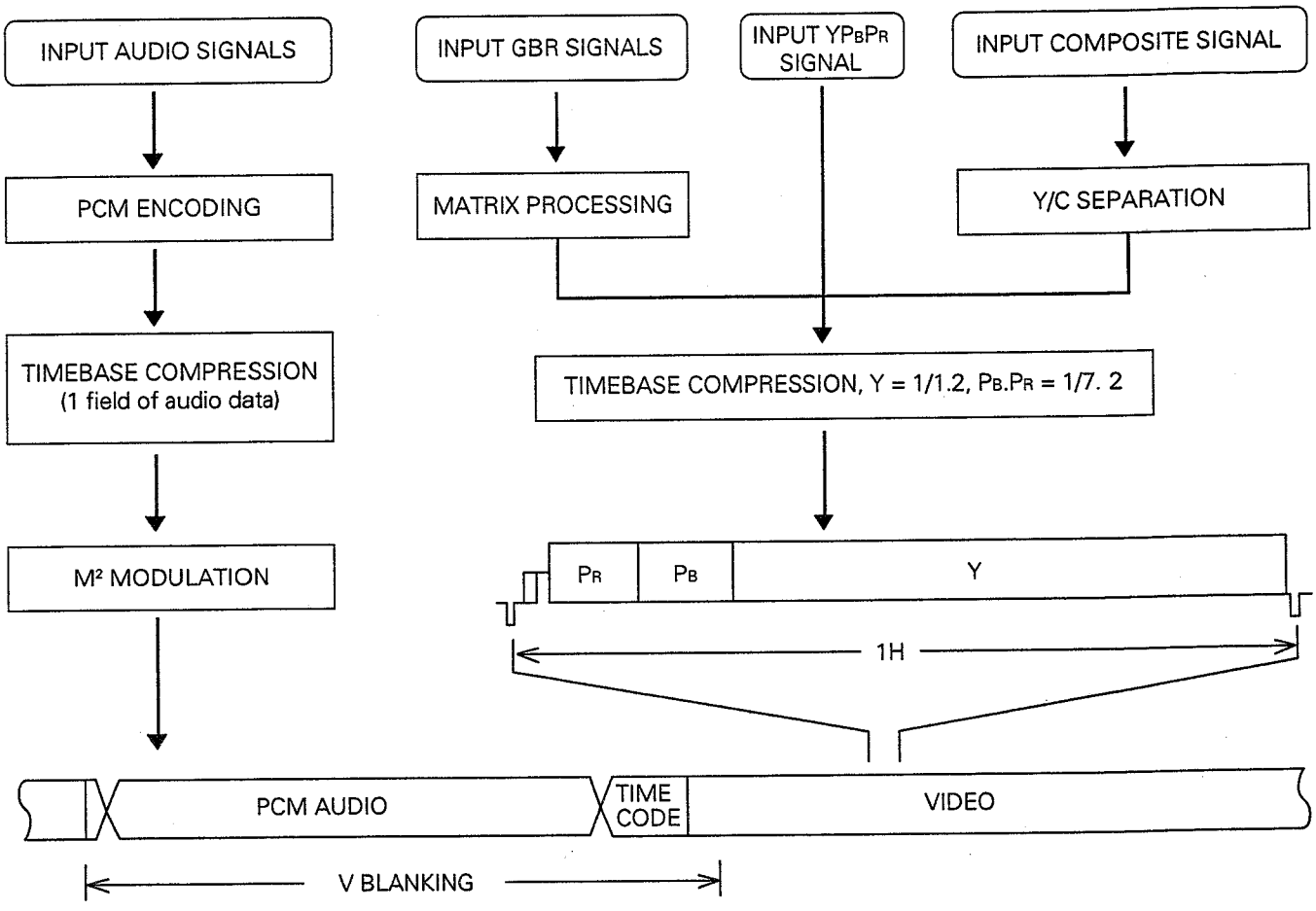
Both RS-232C/RS-422A interfaces provided as standard
The external control terminals include both an RS-232C connector convenient for control from a personal computer and the RS-422A connector which is the industry-standard editing interface.

Time code recording/playback possible
The timecode generator function is provided as standard to allow time code recording in a variety of modes. By using the optional Timecode Board (VDA-V002), the timecode can be recorded from external or can be output in the LTC format.

19-inch rack mountable
The unit can be mounted on an EIA standard-size rack using the optional rack mount kit (VDA-V001).
- Use the optional rack mount kit.

FEATURES

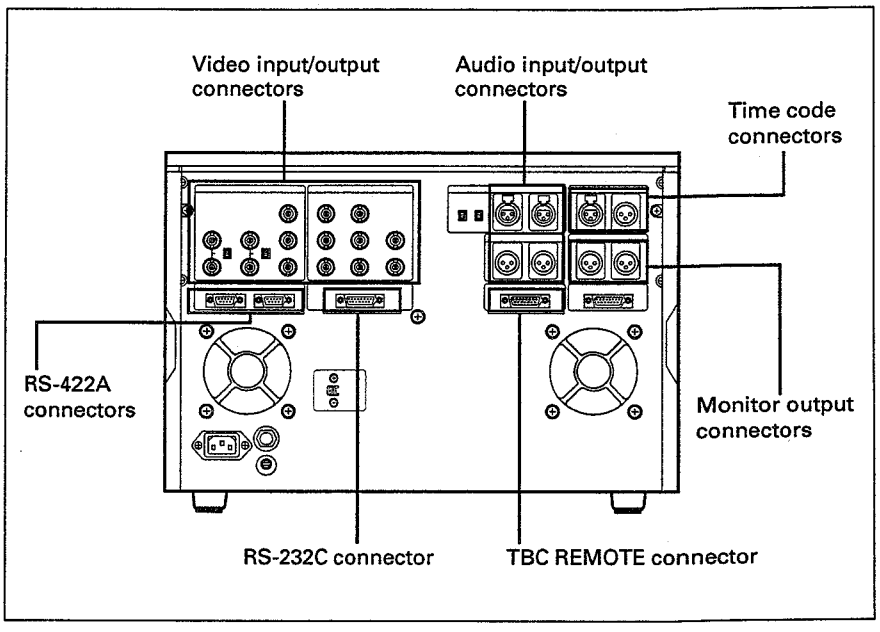
Recording Format



FEATURES

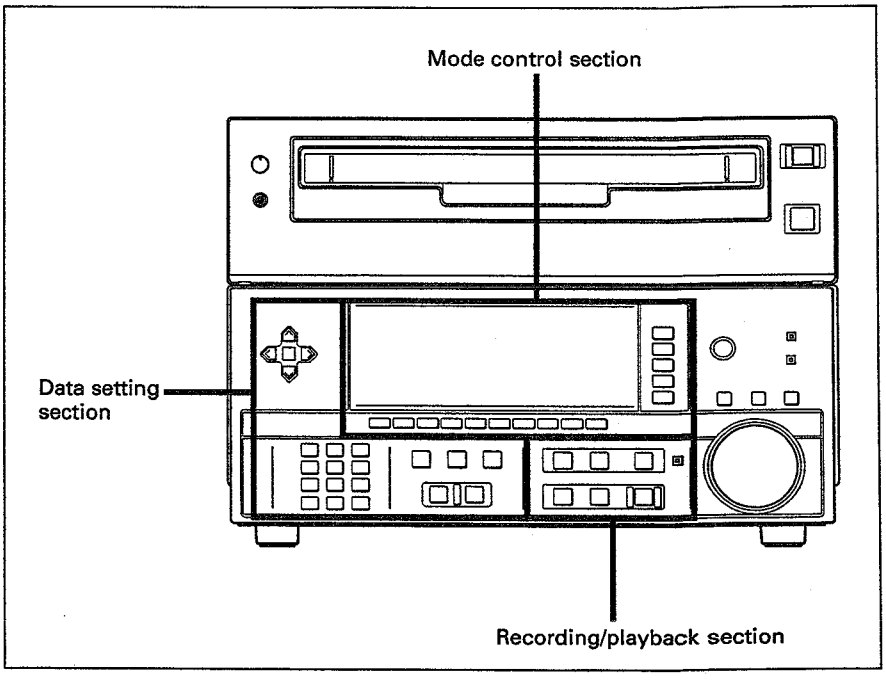
System connections

This unit is equipped with connection terminals for various audio and video signals. In addition, it also has RS-422A and RS-232C remote connectors for direct connections with an existing editor, personal computer and so on.



Control panel

On the control panel, related buttons are grouped and, in spite of the unit's multiple functionality, the number of control buttons is minimized to improve ease of operation.



FEATURES

Mode control

The setting items required for operation are grouped according to operation mode. When one of the MODE1 to 5 buttons is pressed, the display shows the function setting section and a diagram indicating the function setting status and the operation status of the unit. The functions can be set with function keys F1 to F10.

Variable-speed playback

In addition to search playback functions such as jog, shuttle and scan, the variable-speed playback mode provides a noiseless, high-quality playback image over a variable speed range from -1x to +3x speeds. The audio signals during variable-speed playback can be selected to be either muted or unmuted.

19-inch standard rack mountable

The unit can be mounted in a 19-inch rack occupying a height of 7 units.

CHAPTER 1 SUMMARY

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1-1 SUMMARY OF OPERATION MODES

The functions which can be controlled with this unit vary depending on the operation mode. To operate the unit, first press one of the MODE buttons to select the desired operation mode (the display screen varies according to the mode), and press one of the F keys (F1 ~ F10) to use a function available in the selected operation mode.

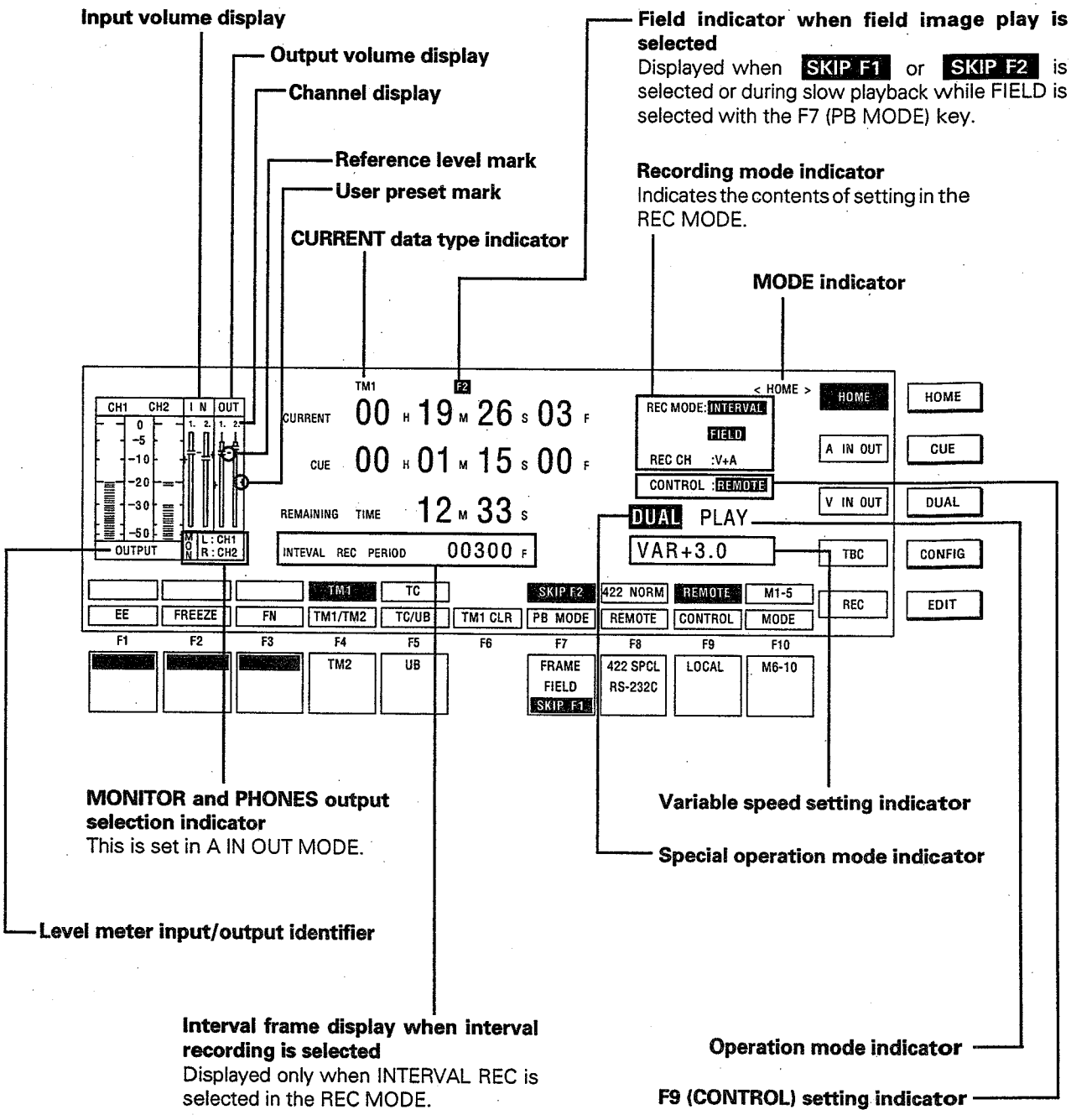
<MODE>	<Contents>	<Transition Method>
HOME	Initial mode screen displayed when the power of the unit is turned ON. Current display switching, remote control setting, playback mode selection, etc.	M1
A IN OUT	Mode used to set the audio input and output. Input/output level setting, selection of the monitor output, audio squelch, etc.	(F10) ► M2
V IN OUT	Mode used to set the video input and output. Input/output video selection, input level adjustment, playback mode selection.	(F10) ► M3
TBC	Mode used to adjust the video output. Level, hue and phase adjustments, selection of their remote control.	(F10) ► M4
REC	Mode used to set data related to recording. Video and audio recording selection, recording mode selection.	(F10) ► M5
CUE	Mode used to assign or recall multiple cue points. Assignment of up to 198 cue points, continuous recording of highlight scenes, etc.	(F10) ► M2
DUAL	Mode used to assign the IN/OUT points of dual playback function. AV split setting, insertion, deletion, reordering, repeat, etc.	(F10) ► M3
CONFIG	Mode used to switch the operation mode to submodes. Submodes: MESSAGE, TC, DISPLAY, FUNC, RS-232C, USER	(F10) ► M4
EDIT	Mode used for editing using the unit as the recorder. Video/audio recording selection, input level adjustment, variable memory function.	(F10) ► M5

<SUBMODES>	<Contents>	<Transition Method>
S-EDIT	Used for making settings related to editing. Preview mode selection, pre/postroll and delay start time setting.	(F10) ► M5 ► F9
MESSAGE	Used to display error messages, operation times and software version. Error content display when the system indicator lights.	(F10) ► M4 ► F1
TC	Used to set the timecode generator and timer data. Generator mode selection, LTC and VITC settings.	(F10) ► M4 ► F2
DISPLAY	Used to set superimposed image output through the VIDEO 3 connector. Display content selection, size and position selections.	(F10) ► M4 ► F3
FUNC	Used to set operation functions. Clutch, buzzer and Park button enable/disable selection, shuttle speed setting.	(F10) ► M4 ► F4
RS-232C	Used to set the RS-232C interface conditions. Baud rate, parity, bit length, termination.	(F10) ► M4 ► F5
USER	Used to assign or recall front panel key setups. Recalling factory setup, assignment of three user setups.	(F10) ► M4 ► F6

1-1 SUMMARY OF OPERATION MODES

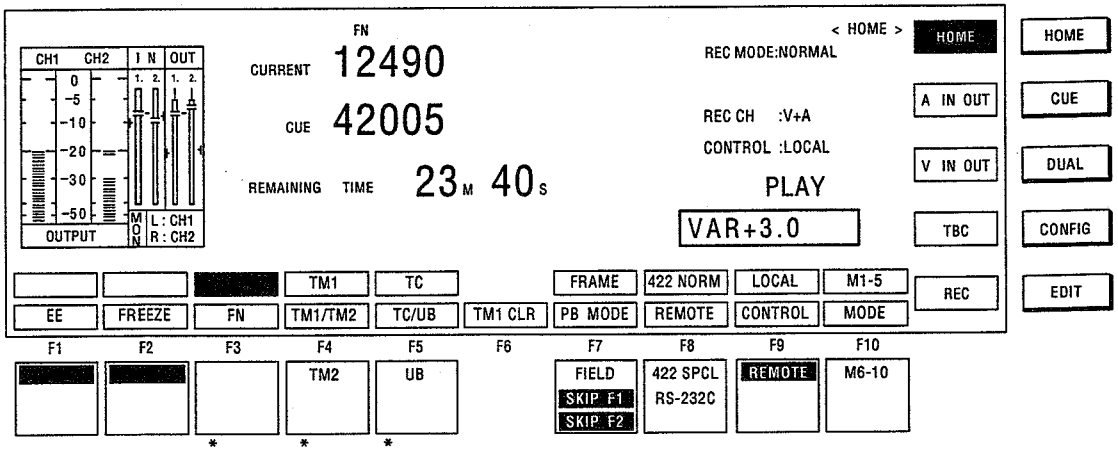
Example of Display in HOME MODE

The display shown below is common for the A IN OUT, REC, CONFIG, DISPLAY, FUNC and RS-232C MODEs. The REC MODE and operation MODE displays on the right half of the display screen are displayed commonly in almost any other MODE.


Input volume display
Output volume display
Channel display
Reference level mark
User preset mark
CURRENT data type indicator
Field indicator when field image play is selected
Displayed when SKIP F1 or SKIP F2 is selected or during slow playback while FIELD is selected with the F7 (PB MODE) key.
Recording mode indicator
Indicates the contents of setting in the REC MODE.
MODE indicator
CH1 CH2 IN OUT
CURRENT 00 H 19 M 26 S 03 F
CUE 00 H 01 M 15 S 00 F
REMAINING TIME 12 M 33 S
INTEVAL REC PERIOD 00300 F
OUTPUT
REC MODE: INTERVAL
FIELD
REC CH :V+A
CONTROL :REMOTE
< HOME >
DUAL PLAY
VAR+3.0
HOME
A IN OUT
V IN OUT
TBC
REC
CUE
DUAL
CONFIG
EDIT
EE FREEZE FN TM1/TM2 TC/UB TM1 CLR PB MODE REMOTE CONTROL MODE
TM1 TC SKIP F2 422 NORM REMOTE M1-5
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
TM2 UB FRAME FIELD SKIP F1 422 SPCL RS-232C LOCAL M6-10
MONITOR and PHONES output selection indicator
This is set in A IN OUT MODE.
Variable speed setting indicator
Special operation mode indicator
Level meter input/output identifier
Interval frame display when interval recording is selected
Displayed only when INTERVAL REC is selected in the REC MODE.
Operation mode indicator
F9 (CONTROL) setting indicator

1-1 SUMMARY OF OPERATION MODES

HOME MODE Initial mode screen displayed when the power of the unit is turned ON.



* Only one of the keys can be selected, and the indicator lights (inverted display) while the key is selected.

F1 EE p. 3-17*1
Temporary output switching to EE

V (Video) or A (Audio) displayed on REC CH is switched to EE. Pressing the key again releases the EE mode. Lighted: EE. Not lighted: PB.
EE is cleared automatically when the operation execution button is pressed.

F2 FREEZE p. 3-17
Recording frame memory freeze

Lighted: Freeze, which is released when the key is pressed again.
Released automatically when the HOME MODE is ended.

F3 FN p. 1-20, 3-15
Change of the CURRENT display to the frame number

Lighted: Displays the frame No. in the CURRENT display.

F4 TM1/TM2 p. 1-20, 3-15
Change of the CURRENT display to TM1 or 2

Each press of the key alternates TM (Timer) 1 and 2.
Lighted: Displays TM 1 or 2 on the CURRENT display.

F5 TC/UB p. 1-20, 3-15
Change of the CURRENT display to TC or UB

Each press of the key alternates TC (timecode) and UB (user's bit). TC 1 and TC 2 can be selected in the TC MODE.
Lighted: Displays TC or UB on the CURRENT display.

F6 TM1 CLR
Clear of TM 1

TM 1 displayed on the CURRENT display can be cleared to 0 by pressing this key.

F7 PB MODE p. 3-9
Selection of playback mode.

Each press of the key switches the following four modes.
FRAME: Slow and still images on a per-frame basis.
FIELD: Slow and still images on a per-field basis.
SKIP F1 : Playback of fields 1 only.
SKIP F2 : Playback of fields 2 only.

F8 REMOTE p. 1-18, 2-12
Selection of interface for remote operation

422 NORM: Selects RS-422A interface. The unit returns the status.
422 SPCL: Selects RS-422A interface. The unit does not return the status.
RS-232C: Selects RS-232C interface. The unit returns the status.

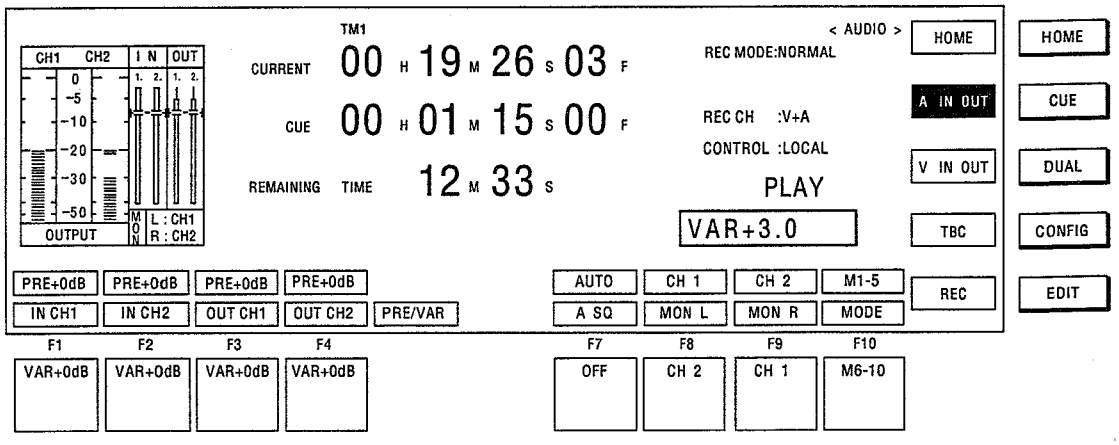
F9 CONTROL p. 2-12
Local/remote selection

LOCAL: Control from the front panel of the unit.
REMOTE : Control from an external controller.

*1 A detailed description is provided on the indicated page(s).

1-1 SUMMARY OF OPERATION MODES

A IN OUT MODE Mode used to set the audio input and output.



* To display the INPUT level on the audio level meter, press the F1 or F2 key.

F1 IN CH1 p. 3-13
CH 1 input level adjustment

F2 IN CH2 p. 3-13
CH 2 input level adjustment

F3 OUT CH1 p. 3-5
CH 1 output level adjustment

F4 OUT CH2 p. 3-5
CH 2 output level adjustment

PRE _ _ dB: Preset status (including user preset status)
VAR _ _ dB: Variable status
└── Attenuator setting value (reference is 0 dB)

Lighted (inverted display): The following adjustments are possible.
1 : Adjustment with TRIM control
2 : Switching between Preset/Variable using F5 key
3 : User preset setting using SET key.
Not lighted (normal display): Fixed
Each press of the key turns the light ON and OFF alternately.

F5 PRE/VAR p. 3-5, 3-13
Switching between Preset/Variable

While one of the F1 to F4 keys is lighted, press to alternate Preset and Variable.

F6

F7 A SQ p. 3-5
Audio squelch selection

AUTO: Audio output is muted during JOG and VAR operations.
OFF: Audio output is not muted during JOG and VAR operations.
(Muting is applied after the still status has been held for 1 to 2 seconds.)

F8 MON L p. 3-5
Monitor L output selection

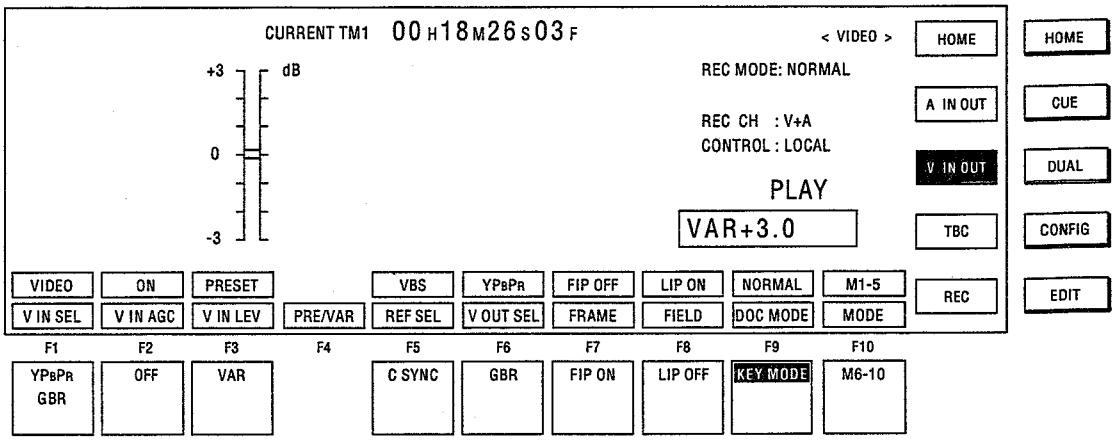
Selects the output from the L channel of the MONITOR connector and PHONES jack.
CH1: The audio of CH 1 is output.
CH2: The audio of CH 2 is output.

F9 MON R p. 3-5
Monitor R output selection

Selects the output from the R channel of the MONITOR connector and PHONES jack.
CH1: The audio of CH 1 is output.
CH2: The audio of CH 2 is output.

1-1 SUMMARY OF OPERATION MODES

V IN OUT MODE Mode used to set the video input and output.



F1 V IN SEL p. 3-14
Input video selection

VIDEO: Selects the composite video signal.
YPBPR: Selects Y/PB(B-Y)/PR(R-Y) signal.
GBR: Selects the GBR signal.

F2 V IN AGC p. 3-14
AGC selection

The following switching is possible only while VIDEO is selected with the F1 key.
ON: AGC (Auto Gain Control) is turned ON.
OFF: AGC is turned OFF.

F3 V IN LEV p. 3-14
Video input level adjustment

The adjustment is possible when the F1 key is set to VIDEO and F2 key is set to OFF.
Lighted: Adjustment using the TRIM control and the Preset/Variable switching with the F4 key are enabled.

F4 PRE/VAR p. 3-14
PRE/VAR selection

Press this key while the F3 key indicator is lighted to switch between Preset and Variable.

F5 REF SEL p. 3-15
EXT REF connector input signal selection

VBS: Composite video (black burst) input. *1
C SYNC: Composite sync input.

F6 V OUT SEL p. 3-6
Component output signal selection

Selects the output signals from the Y/G, PB/B and PR/R output connectors.
YPBPR: Outputs Y/PB(B-Y)/PR(R-Y) signal.
GBR: Outputs the GBR signal.

F7 FRAME p. 3-6
Frame image output mode selection

Valid in the frame playback mode.
FIP ON: Field interpolation is turned ON. *2
FIP OFF: Field interpolation is turned OFF.

F8 FIELD p. 3-6
Field image output mode selection

Valid in the field playback mode.
LIP ON: Line interpolation is turned ON. *2
LIP OFF: Line interpolation is turned OFF.

F9 DOC MODE p. 3-6
Dropout compensation mode selection

NORMAL: Normal mode.
KEY MODE: Mode for eliminating small dropout near the black level. This mode is not used normally because a special line correlation compensation is applied. *2

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*1 As the REF input signal is used as the reference signal of the playback circuitry, input a high-quality signal to this connector.
*2 As these modes apply a synthesized correlation compensation processing, code data such as VITC may not be reproduced properly.

CHAPTER 3 OPERATIONS

3-1 Startup procedure 3-2
3-2 Playback procedure 3-5
3-3 Recording procedure 3-12
3-4 Timecode recording and output 3-18
3-5 Dual playback 3-21
3-6 Cue mode 3-25
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3-9 Superimposition 3-40
3-10 System setting 3-41

3-1 STARTUP PROCEDURE

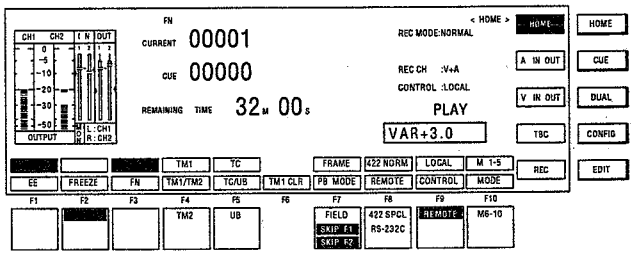
This section describe the procedure from inserting disc to starting, stopping and taking it out of the unit.

Preparations

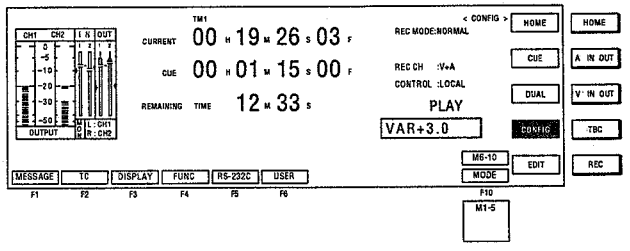
1. **Install the unit properly following the Installation Precautions.**
2. **Preparation of disc**
   Prepare the special disc (VDM-V130P), remove the transportation pad, etc., following the indications on the disc, and check that no foreign object is attached and the label is not separated.

Recalling factory setup

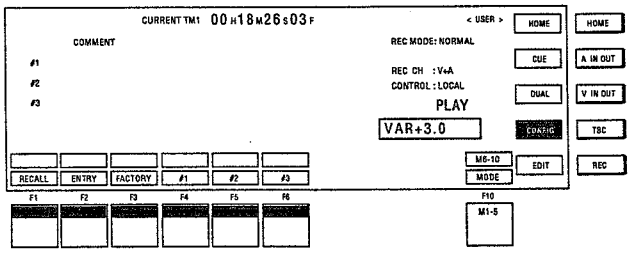
3. **Check that the voltage indication on the rear panel matches the local mains voltage.**
   Connect the mains power cord and push the POWER switch ON.
   Do not proceed to the following operations until the power is turned ON and the screen shown below (HOME) is displayed.



4. **Check that the F9 (CONTROL) key indication is LOCAL.**
   When it is **REMOTE**, press the F9 key to change to LOCAL.
5. **Press the F10 (MODE) key to display M6 - M10.**
6. **Press the M4 (CONFIG) key to enter the CONFIG MODE.**



7. **Set the control panel setting to the same as the factory setup.**
   If you do not want to change the setting, go to step 18.
8. **Press the F6 (USER) key to enter the USER SUBMODE.**

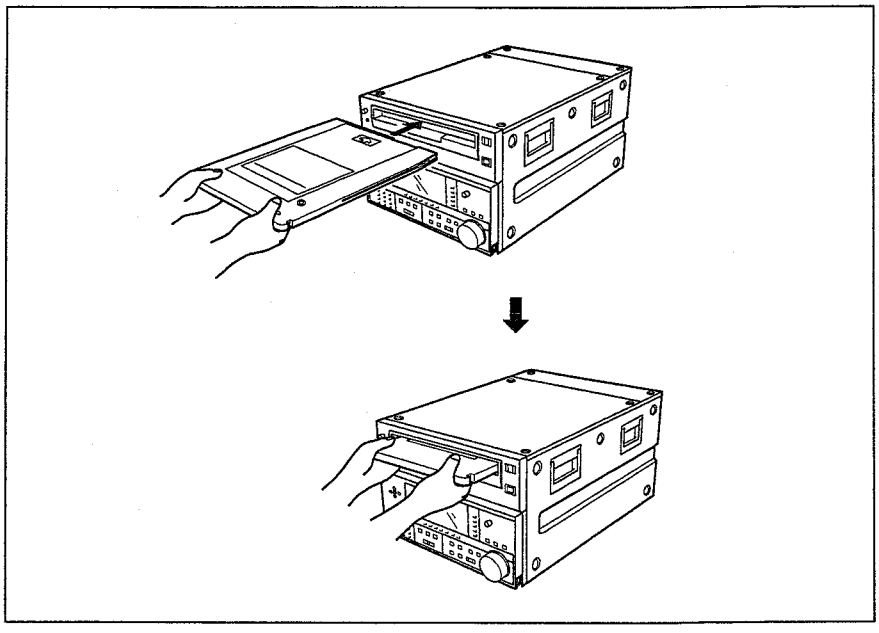


Press the F1 (RECALL) key to light the mode indicator.
Press the F3 (FACTORY) key to light the mode indicator.
Press the EXECUTE button.
The control panel performs the initialization operation, and the unit enters the HOME MODE. Now, the control panel key setup should be the same as the factory setup.

3-1 STARTUP PROCEDURE

Disc startup

9. **Insert a disc.**
   Insert the disc with the labeled side facing up.
   When it is inserted to the specified position, it is automatically pulled into the slot.



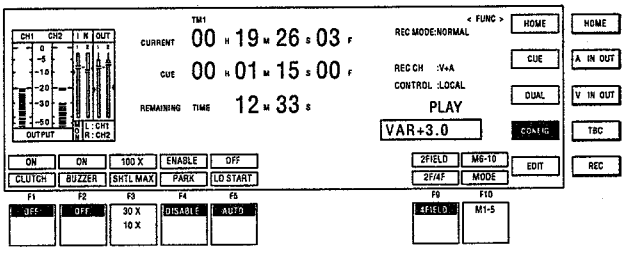
10. **Press the PLAY button. The disc starts rotation,the SERVO indicator lights and the PLAY button flashes.**
11. **In 20 to 30 seconds, the disc attains the specified rotation speed, the SERVO indicator goes OFF and the PLAY button lights. At the same time, the normal playback mode starts and the CURRENT display address starts to increment.**
    (It is also possible to start the disc by pressing the STOP button in place of the PLAY button in step 10. In this case, the unit is in the pause mode even after the disc has attained the specified rotation speed, so the address is not incremented.)
    Now the disc startup has completed.

Disc ejection

12. **Press the STOP button so that it lights.**
13. **Press the PARK button. The SERVO indicator lights, the PARK button flashes, and the disc starts to be braked.**
14. **In about 10 seconds, the disc stops, the SERVO indicator goes OFF, the PARK button lights and the unit enters the PARK mode.**
15. **Press the EJECT button. The disc insertion slot opens, and the disc comes out ejected and stops.**
    Steps 12 to 14 can be omitted.
16. **Hold the two sides of the disc cartridge and pull it toward the front to take the disc out of the unit.**
    Now the disc take-out operation has completed.

In case the factory setup need not be recalled

17. Press the F4 (FUNC) key to enter the FUNC submode.



18. Check that the F4 (PARK) and F5 (LD START) keys are ENABLE and OFF respectively.

If they are not, press the proper key(s) to set as required.

Reference

When F4 key is **DISABLE** :

The PARK button is disabled.

When F5 key is **AUTO** :

The PARK button is disabled, and the disc is started at the same time as the disc is inserted.

19. Press the M1 (HOME) key to enter the HOME MODE.

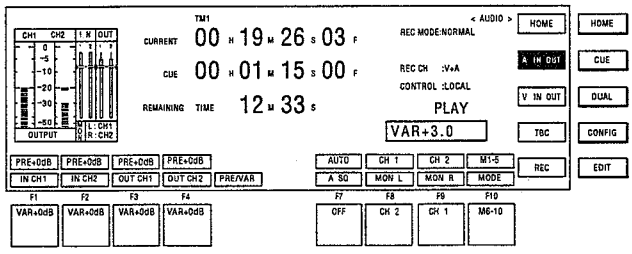
20. Return to 9.

3-2 PLAYBACK PROCEDURE

1. Following section 2-3 "Connections" (p. 2-10), connect the video monitor, audio monitor, video recorder, etc., to the OUTPUT and MONITOR connectors of the unit. When connecting equipment with a danger of causing damage due to excessive input, set the amplifier to the minimum volume and turn the power of the unit OFF before connection.
2. Following section 3-1 "Startup Procedure" (p. 3-2), insert and start the disc.

1 Selection and adjustment of audio playback output

Enter the A IN OUT MODE.



1. The reference output level of this unit is +4 dBm, and the level meter indication at that time is –20 with PRESET. The output level is to be adjusted as required according to the recording level and the optimum input level of the equipment connected to this unit.
2. Press the F3 (OUT CH1) and F4 (OUT CH2) keys to light their mode indicators (inverted display). (These keys does not have to be pressed simultaneously.)
3. Adjust the output level with the TRIM control. This adjustment affects the AUDIO OUTPUT, MONITOR and PHONES output connectors and jacks. Press the F5 (PRE/VAR) key to switch the PRESET condition and the last VAR setting condition alternately.
4. When it is required to fix the setting after adjustment, press the F3 and F4 keys again to turn their mode indicators OFF (normal display).

User preset setting

A user preset values can be set for each of the recording/playback levels of F1 to F4. First light the indicator of the key and adjust the level with the TRIM control. Then, press the SET button to set the level as the preset level.

Selection of monitor output

The monitor output can be selected with the F8 (MON L) and F9 (MON R) keys. This selection affects the MONITOR and PHONES output connectors and jacks. With both L and R, the selection for CH1 and that for CH2 can be made independently.

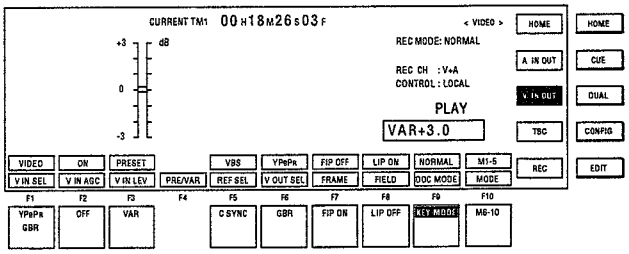
Selection of audio squelch

The audio squelch can be selected with the F7 (ASQ) key.
AUTO: Audio output is muted in JOG VAR mode.
OFF: Audio output is not muted in JOG VAR mode. (Mute occurs when the still condition has been held for 1 to 2 seconds.)

3-2 PLAYBACK PROCEDURE

2 Selection of video playback output and output mode

Enter the V IN OUT MODE.



Selection of the component output

Each press of the F6 (V OUT SEL) key switches between YPBPR and GBR.

YPBPR: The connectors output the Y, PB and PR signals.
GBR: The connectors output the analog G, B and R signals.
The VIDEO 1 to VIDEO 3 connectors always output composite video signals.

Selection of the frame image mode

Each press of the F7 (FRAME) key switches between FIP ON and FIP OFF.

FIP ON: Field interpolation is turned ON so both fields are combined to provide an image without flicker.
FIP OFF: The two fields are output alternately.

Selection of the field image mode

Each press of the F8 (FIELD) key switches between LIP ON and LIP OFF.

LIP ON: Line interpolation is turned ON so a smooth image can be displayed.
LIP OFF: Line interpolation is not applied and the signal is output as it is.

Selection of the dropout compensation mode

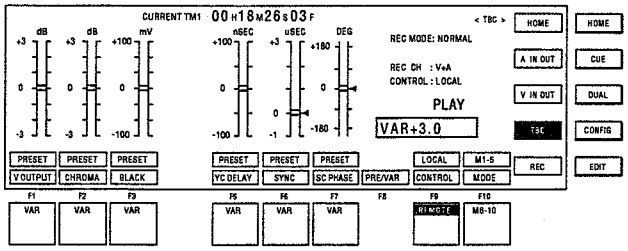
Each press of the F9 (DOC MODE) key switches between NORMAL and **KEY MODE**

NORMAL: Normal mode.
KEY MODE: When a monochrome image such as a telop is recorded, played and combined with level keying, the key mode allows to prevent the level keying from being applied to small dropouts.

NOTE:
The key mode performs special dropout compensation utilizing line correlation. Therefore, it may not be capable of high-fidelity reproduction with some image patterns.
The same type of compensation is also carried out for the chroma signal's non-color level. The tone of pastels and light colors may change slightly, so be sure to check the tone before using.
When FIP ON, LIP ON or KEY MODE is selected when playing a disc containing VITC or other code data, the resulting combination, compensation and correlation processes may prevent the data from being played back accurately. In cases such as this, do not select these modes.

3 Adjustment of TBC

Enter the TBC MODE.



To adjust the video level, chroma level, black level, YC delay, sync phase or subcarrier phase of output video signal, press respectively the F1 (V OUTPUT), F2 (CHROMA), F3 (BLACK), F5 (YC DELAY), F6 (SYNC) or F7 (SC PHASE) key so that its indicator lights.

The display shows the current adjustment status. Use the TRIM control to make adjustment. When it is required to switch between PRESET and VAR, press the F8 (PRE/VAR) key. When the same key is pressed again, the indicator goes OFF and the adjusted value will be held.
(The adjustments from F1 to F7 are possible when LOCAL has been selected with F9.)

F1 (Video output level)

PRESET: Reference value (0 dB)
VAR: Adjustment (gain: –3 dB to +3 dB)

F2 (Chroma level)

PRESET: Reference value (0 dB)
VAR: Adjustment (gain: –3 dB to +3 dB)
By combining this with the video output level adjustment, the chroma level can be varied in the range from –6 to +6 dB.

F3 (BLACK level)

PRESET: Reference value (0 mV)
VAR : Adjustment (–100 mV to +100 mV)

NOTE:
The dark clipping level is set to –70 mV (whole width). Therefore, the black level of the output video signal cannot be reduced below –70 mV.

F5 (YC delay)

This adjusts the delays of the luminance signal and chroma signal.

PRESET: Reference value (0 nsec.)
VAR: Adjustment (–100 nsec. to +100 nsec.)

F6 **(Sync)**
This adjusts the phase of the output video signal with respect to the system synchronization phase of the external reference input. The advance direction is indicated by + and the delay direction is indicated by –.

PRESET: Reference value (0 µsec.)
VAR: Adjustment (+3 µsec. to –1 µsec.)

F7 **(SC PHASE)**
This adjusts the subcarrier phase of the output composite video signal with respect to the subcarrier of the external reference input.

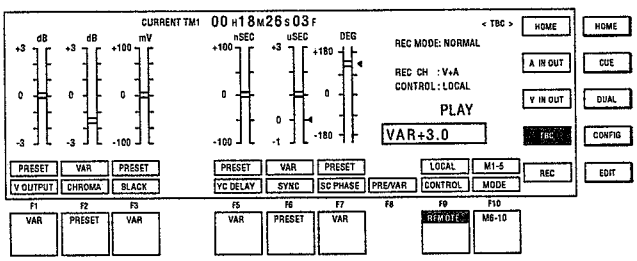
PRESET: Central value of adjustable range.
VAR: Adjustment (360 DEG p-p or more)

Selecting whether the TBC is adjusted from the front panel or remote control

This selects whether the TBC mode adjustments described above are to be performed on the front panel or from a remote controller connected to the TBC REMOTE connector.
Each press of the F9 (CONTROL) key switches between LOCAL and REMOTE.

NOTE:
The level is not displayed during remote mode.

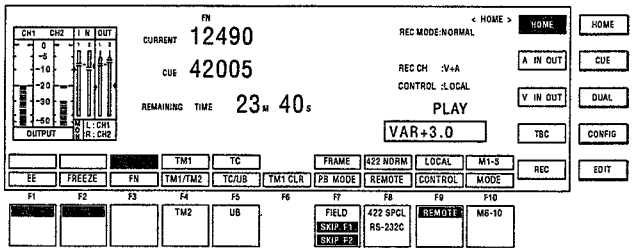
User preset setting



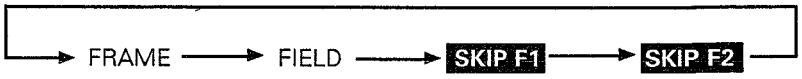
The user preset settings can be made for the F6 (SYNC) and F7 (SC PHASE) keys. Press the F6 or F7 key so that the indicator lights, adjust the level with the TRIM control, and press the SET key. The preset marker (◀ mark) tracks the current indicated level and this level is set as the preset level.

4 Selection of playback mode

Enter the HOME MODE.



Every time the F7 (PB MODE) key is pressed, the playback mode is switched as shown below.

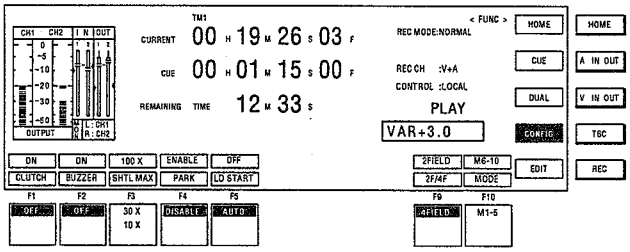


FRAME: Normal playback mode. Normal pictures and still images are frame images.
FIELD: This is a normal playback mode. Still images and slow playback images are field images.
SKIP F1: Only the odd fields are played. Normal pictures and still images are field images.
SKIP F2: Only the even fields are played. Normal pictures and still images are field images.

NOTE:
In the SKIP playback modes, images of the opposite field may be output during scanning or search, but this is not malfunction.

5 Selection of servo lock mode

Enter the FUNC MODE.



Press the F9 (2F/4F) key to select the servo lock mode during recording and playback.

2 FIELD: Locked with 2-field sequence.
4 FIELD: Locked with 4-field sequence.

3-2 PLAYBACK PROCEDURE

6 Execution of playback

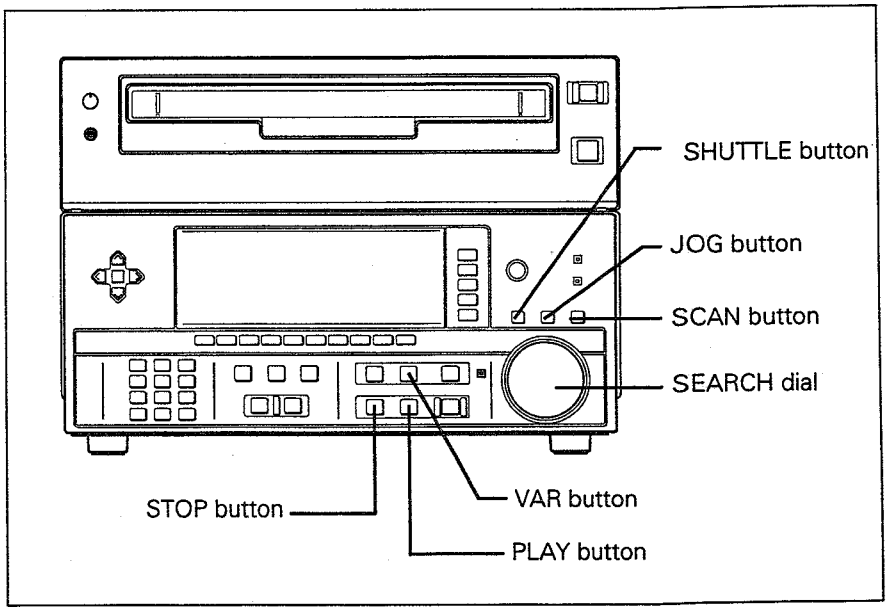
Normal playback

Press the PLAY button.

Playback at various speeds

Press the JOG, SHUTTLE, SCAN or VAR button, and vary the speed with the SEARCH dial.

Mode	Speed Variation Range	Setting Method
Shuttle	–100 ~ +100 –30 ~+30 –10 ~ +10	Vary the speed with the SEARCH dial. The variable range can be set in the FUNC MODE.
Jog		Playback speed can be varied according to how fast the SEARCH dial is turned.
Variable-speed	–1 ~ +3	Playback speed can be selected with the SEARCH dial. Variable-speed playback is initiated when the VAR button is pressed.
Scan		Press the SCAN button in play mode or stop mode. A still image is displayed when the SCAN button is pressed. Move the images forward or backward by turning the SEARCH dial.



Stopping playback

Press the STOP button.

7 Cue assignment and search execution

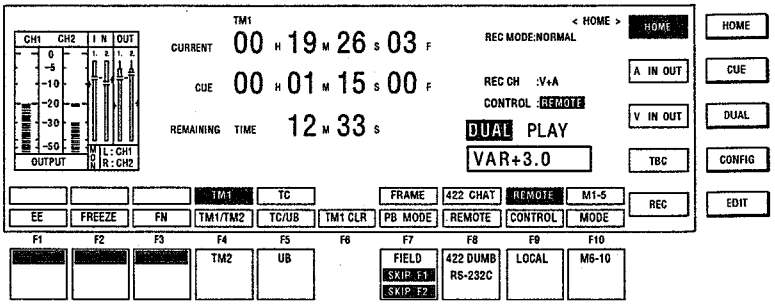
Description on the cue assignment and search execution in other modes than the CUE MODE, for example in the HOME MODE. (These operations in the CUE MODE will be described in section 3-6 "Special Playback" (p.3-25).)

When the ENTRY IN or OUT button is pressed, the CURRENT display data is assigned in the cue area. Another method to assign cue data is to display the cursor by pressing the CURSOR center key, enter the address with the numeric keys and press the SET key to assign it.

Pressing the SEARCH button searches this cue point.
Pressing the PREROLL button performs pre-roll search of this cue point (i.e. the search of the point calculated by subtracting the pre-roll time set in the S-EDIT MODE the from this cue point).

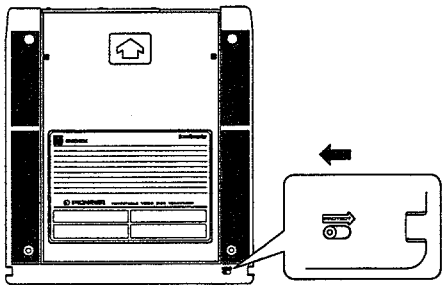
NOTE:
Search is possible even when the CURRENT display content is TC, but search may sometimes take time or be unable to reach the target point in case there are discontinuous points or large/small relations are inverted.

8 EL display



3-3 RECORDING PROCEDURE

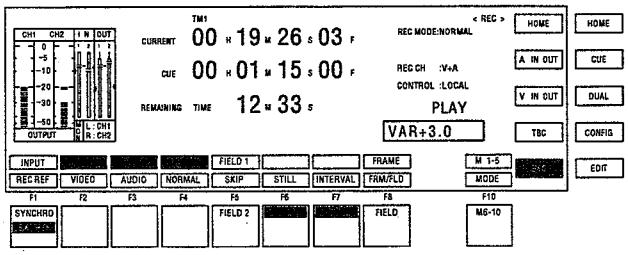
1 **Following the example shown in section 2-3 "Connections" (p. 2-10), connect the video/audio signal sources, video recorder, etc., to the INPUT connectors of this unit, and connect the reference signal to the EXT REF input connector.**
2 **Release the write protection of the disc cartridge.**



3 **Following section 3-1 "Startup procedure" (p. 3-2), insert and start the disc. Check that the REC INHIBIT indicator is not lighted.**

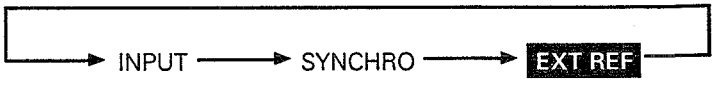
1 Selection of recording mode

Enter the REC MODE.



Selection of reference mode

Each press of the F1 (REC REF) key switches the reference mode as follows.



The EXT REF mode cannot be selected when the F1 (V IN SEL) key in the V IN OUT MODE is set to VIDEO.

INPUT: Recording is executed when the disc rotation phase locks with the input video signal. The disc rotation phase locks with the reference input if an external reference input is used, and with the built-in sync generator if an external reference input is not used. Therefore, if the input video signal is out of phase with respect to the reference signal, it may take some time until recording standby or recording starts, but perfectly-synchronized recording will be carried out. If it is required to start recording immediately, apply a signal which is in phase with the input video signal to the EXT REF input connector.

SYNCHRO: During recording, the built-in TBC performs frame synchronizing and compensates for the phase error between the input video signal and disc rotation. As a certain error exists between the frame interval of the input video signal and the disc rotation interval (frame interval of the external reference or built-in sync generator), partial overrun may occur during recording, causing frame dropout or overwriting in the recorded video. However, the audio remains continuous because it is always synchronized with the disc rotation. As a result, lip synchronization between the video and audio may become erroneous in this case.

EXT REF: Recording is executed in synchronism with the external reference input. Select this mode only when recording signals without sync, such as GBR signals.

3-3 RECORDING PROCEDURE

Selection of recording channel

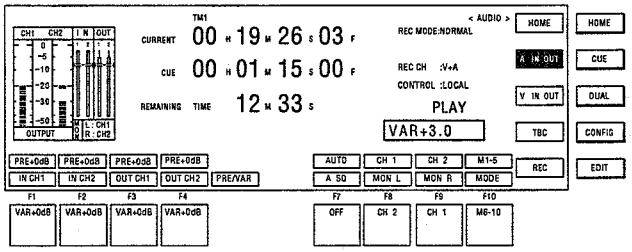
Every time the F2 (VIDEO) or F3 (AUDIO) key is pressed, the key is switched ON and OFF alternately, and V+A, V Only, A Only or INHIBIT can be selected. The subsequent description assumes that ON is selected for both F2 and F3.

Selection of recording mode

This unit has four recording modes; NORMAL, SKIP, STILL and INTERVAL. The latter three modes will be described in section 3-7 "Special recording" (p. 3-28). On this occasion, press the F4 (NORMAL) key to light the mode indicator.

2 Audio input level adjustment

Enter the A IN OUT MODE.



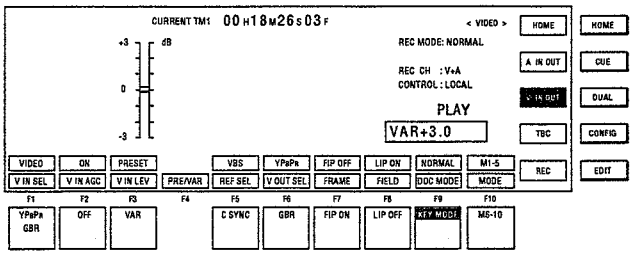
1. The reference input level to this unit can be switched to HIGH; +4 dBm, LOW: –20 dBm with the LEVEL switch on the rear panel. The level meter indication at this time should be –20 with PRESET. Adjust the input level as required according to the output level of the equipment connected to this unit. (Headroom: 20 dB)
2. Press the F1 (IN CH1), F2 (IN CH2) keys to light this mode indicators (inverted display). Check that the audio level meter displays "INPUT".
3. Adjust the input level with the TRIM control or switch between the PRESET condition and the last VAR setting condition alternately by F5 (PRE/VAR) key.

User preset setting

A user preset values can be set for each of the recording/playback levels of F1 to F4. First light the indicator of the key and adjust the level with the TRIM control. Then, press the SET key to set the level as the preset level.

3 Selection and adjustment of video input

Enter the V IN OUT MODE.



1. Press the F1 (V IN SEL) key to select the input video signal. Every time the key is pressed, the video signal type is switched as shown below.

   VIDEO: For input and recording of composite video signals.
   YPBPR: For input and recording of component video signals (YPBPR).
   GBR: For input and recording of analog GBR signals.

   NOTE:
   If VIDEO is selected here while the F1 (REC REF) key in the REC MODE is set to **EXT REF** *, the REC REF setting is automatically changed to INPUT.*

2. Press the F2 (V IN AGC) key to ON to record the composite video signal input using AGC (automatic gain control).

   NOTE:
   The AGC function is not available with the YPBPR signal and GBR signal inputs. The AGC is automatically turned OFF when the F1 (V IN SEL) key setting is changed from VIDEO to YPBPR.

3. The video signal input level can be adjusted when VIDEO is selected using F1 (V IN SEL) and AGC is turned OFF using F2 (V IN AGC).
   To adjust the video input level, press the F3 (V IN LEV) key so that the indicator lights (inverted display) and adjust with the TRIM control, or press the F4 (PRE/VAR) key to select PRESET or VAR.

4. To fix the adjusted level after adjustment, press the F3 key again so that the indicator goes OFF (normal display).

4 Selection of external reference input

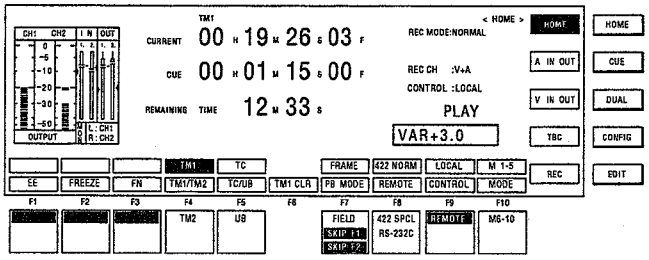
The input to the EXT REF input connector can be selected. Each press of the F5 (REF SEL) key switches between VBS and C SYNC.
VBS ⟷ C SYNC

VBS: Select to input a composite video (black burst) signal.
C SYNC: Select to input a composite sync signal.

NOTE:
The reference input signal is used as the reference for the playback system. Use a high-quality signal from a video generator, etc.

5 Execution of recording

Enter the HOME MODE.



Selection of CURRENT display data

Press one of the F3 (FN), F4 (TM1/TM2) and F5 (TC/UB) keys to light the mode indicators. With TM1/TM2 and TC/UB, they can be selected by pressing the F4 or F5 key again.

Confirmation of recording mode

Before executing recording, check that the recording mode is displayed on the right side of the EL display. (The recording mode indication is also displayed in other modes than HOME.)

3-3 RECORDING PROCEDURE

Starting recording

1 Move the play head by means of a search operation, etc., to the track where recording is to start, and press the STOP button to display a still image.

2 Press the REC STANDBY button to initiate the record-standby mode.

At this time, the video and audio signals may go out of sync for an instant, but this is not a malfunction. The REC STANDBY button continues blinking until synchronization is obtained and the unit enters record-standby mode. Since the internal synchronization pull-in operation of the recording system is carried out immediately after playback starts from the PARK (disc stopped) condition, a short amount of time will be required for the unit to enter record-standby mode.

3 While holding the REC/EDIT button depressed, press the PLAY button.

Recording starts.

Stopping recording

Press the STOP button.

The recording stops and the unit enters the record-standby mode (in the SYNCHRO mode, the unit will not enter the record-standby mode), and the output becomes PB. To release the record-standby mode, press the STOP button.
At this time, a momentary sync error may occur with the video and audio signals, but this is not malfunction.

NOTE:
The recording cannot be monitored.

6 Checking the input signal

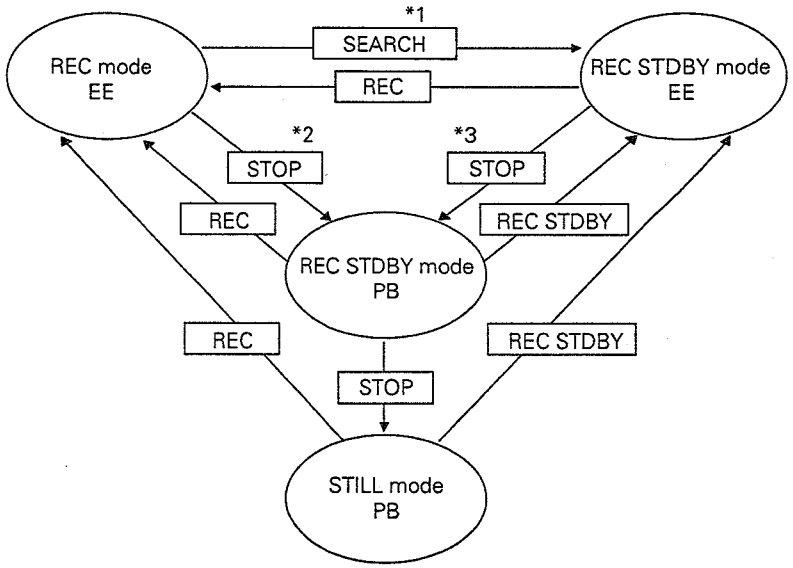
The input signal can be checked by pressing the F1 (EE) key to enter the EE mode as well as by pressing the REC STDBY button. The F1 (EE) key is enabled only in the stop mode, and canceled automatically when the execution button is pressed. The EE output is only the signal selected for the REC CH, so it is only VIDEO if "V Only" is displayed.

Memory freeze

The recording video frame memory can be frozen by pressing the F2 (FREEZE) key. This allows to record input signal containing motion as a still image, or to record the same still image on several number of desired tracks. The lighting of the F2 key mode indicator indicates freeze mode, which can be canceled by pressing the F2 key again to turn the mode indicator OFF.
Also, the freeze mode is automatically canceled when another MODE is entered by quitting the HOME MODE.

EE-PB mode transition

The REC, REC STDBY, STOP and other buttons allow to switch the EE, PB, REC STDBY and STILL modes of the unit between them as shown below.



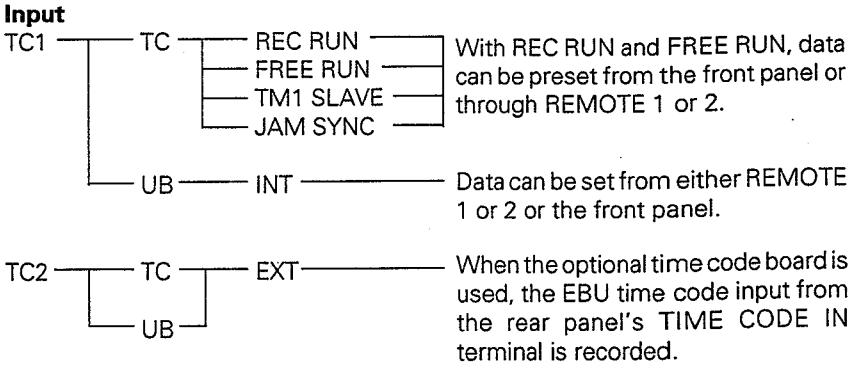
*1 Including PREROLL button.
*2 Including VAR, SHUTTLE, JOG and SCAN buttons.
*3 Including VAR, SHUTTLE, JOG, SCAN and PLAY buttons.

3-4 TIMECODE RECORDING AND OUTPUT

1 Timecode recording format

With this LaserRecorder, the time code is compressed along the time axis using the V blanking period and recorded at the head of the video recording area (see page 8). Accordingly, in the same way as with the VITC, although it is not possible to insert just the time code or read the time code while fast-forwarding or fast-reversing, the time code can be accurately read during still frame or slow playback operation. Also, since a CRC (error detection code) is attached to the time code, data reliability is extremely high.
Another big feature is that the time axis compression method allows two time code areas in each frame. Because of this, when the optional "VDA-V002" time code board is used, for example, it is possible to simultaneously record not only the time code and user's bit of the source recorded from the TIME CODE IN terminal, but also another time code and user's bit such as from a remote controller. These two time code areas are called TC1 and TC2, respectively, and can be used as described below.

Input


TC1
TC
REC RUN
FREE RUN
TM1 SLAVE
JAM SYNC
With REC RUN and FREE RUN, data can be preset from the front panel or through REMOTE 1 or 2.
UB
INT
Data can be set from either REMOTE 1 or 2 or the front panel.
TC2
TC
UB
EXT
When the optional time code board is used, the EBU time code input from the rear panel's TIME CODE IN terminal is recorded.

Output

TC1 or TC2 can be selected for the front panel display and communications using the REMOTE 1 or 2 terminal.

TC1, TC2 or TM1 can be selected for the TIME CODE OUT terminal output and the VITC signal output. (When the time code board is used)

TM1 SLAVE mode

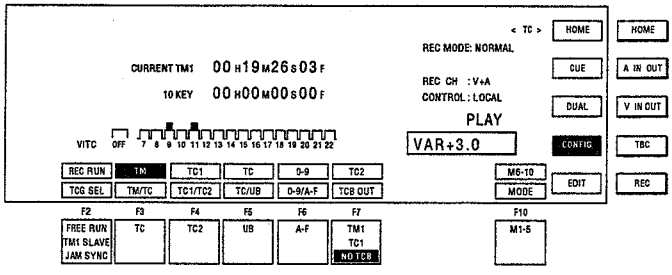
This mode slave locks the time code generator to the TM (timer) 1. If this mode is set, the recorded time code will maintain continuity even when random access is used to carry out nonlinear editing. However, since TM1 is a resettable timer, care must be taken not to accidentally reset the timer.

Note on JAM SYNC mode

In this mode, the timecode generator is locked as slave to the TC 1 data which has been written on the recording start track, and timecode is advanced during execution of recording. This mode allows to maintain the continuity of the recorded timecodes in assemble editing.
The slave lock described above is applied at the same time as the start of recording. The TCG value which is displayed before the start of recording is not a value subjected to slave lock.

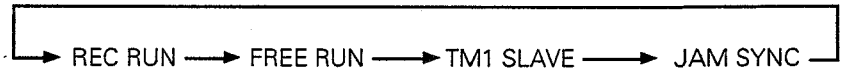
2 Recording of TC1

Enter the TC MODE.



Time code generator mode selection

The F2 (TCG SEL) key is used for switching the stepping mode of the VDR's built-in time code generator. The built-in generator outputs the time code used for TC1. Each press of the F2 key switches the generator's stepping mode as follows:



REC RUN: The time code steps (advances) only during recording.
FREE RUN: The time code steps constantly while the power is ON.
TM1 SLAVE: The time code is slave locked to TM1 (timer 1).
JAM SYNC: The time code is slave locked to TC1 written on the recording start track and steps during recording.

Selection of CURRENT display (RS-422A interface communication) data

The display data can be selected based on the combination of the F3 (TM/TC), F4 (TC1/TC2) and F5 (TC/UB) keys. As described in section 1-2 (p.1-20), there are 10 kinds of CURRENT display data (when the timecode reader and generator are distinguished), and other switchings than TM1/TM2 switching are possible in the TC MODE.
When it is required to display timecode generator data, select TC with the F3 (TM/TC) key and press the REC STDBY button to enter the REC STDBY (EE) mode.
The selection of the F4 (TC1/TC2) key is also applied to the TC and UB data selection for the RS-422A interface communications.

Data setting

1. Three kinds of time data, TM1, TCG1 or UBG1 can be set, but TCG1 can be set only when the generator mode is REC RUN or FREE RUN. Display one of the three kinds of data above, which is to be set, as the CURRENT display data.
2. Press the CURSOR center key to display the cursor in the 10 KEY area.
3. Using the numeric keys, enter data in the 10 KEY area. When setting UBG1 data, use the F6 (0-9/A-F) key to switch the definition of the numeric keys as required.
4. When data has been entered, press the SET button to set the 10 KEY display data as the CURRENT display data.

3-4 TIMECODE RECORDING AND OUTPUT

3 Recording of TC2

When the optional VDA-V002 timecode board is installed, the LTC input to the TIME CODE input connector on the rear panel can be recorded automatically to the TC2 area of the disc by executing recording.
No setting operation is required for this.

4 Selection of the output (only when the timecode board is installed)

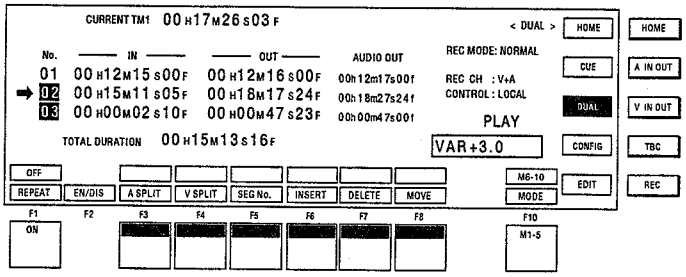
The F7 (TCB OUT) key allows to select the LTC data output from the TIME CODE output connector on the rear panel and the VITC data to be inserted in the VIDEO output. TC2, TC1 or TM1 can be selected.

5 Selection of the line where VITC is to be inserted (only when the timecode board is installed)

To set the line where VITC is to be inserted, press the CURSOR center key to display the cursor, operate the CURSOR keys to move the cursor to the VITC insertion line display, and set the VITC to the desired line No. (or OFF) with the TRIM control. After completion of setting, press the CURSOR center key so that the cursor disappears.

3-5 DUAL PLAYBACK

Enter the DUAL MODE.



1 IN/OUT point registration

1. Enter the normal editing mode.
   Check that the F3 (A SPLIT) and F4 (V SPLIT) key displays are not lighted. If any indicator is lighted, press its key to turn it OFF.
2. Using the CURSOR keys, move the desired segment No. to the execution line indicated with ➡.
3. To assign the IN and OUT points, press the IN button at the point you want to set as the IN point, and press the OUT button at the point you want to set as the OUT point. When the OUT point is assigned, the same data is also assigned as the sub-OUT point. The IN and OUT points can also be set by pressing the CURSOR centre key to display the cursor, entering with the numeric keys and pressing the SET key to assign. (Note that the cursor cannot be moved to the sub-OUT point except in the split mode.) Assign the IN and OUT points of each segment as described above.

2 Enabled/disabled switching of each segment

The segments with the lighted segment Nos. (inverted display) are enabled, and those with non-lighted-segment Nos. (normal display) are disabled. The enabled/disabled setting can be switched alternately by pressing the F2 (EN/DIS) key. Disabled segments are ignored in the DUAL mode.

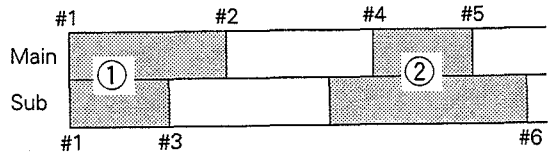
3 Repeat mode selection

The F1 (REPEAT) key allows to switch the repeat mode ON/OFF.

4 Split mode selection: F3, F4

When the split mode is selected, a third point can be assigned as the sub-OUT point. Display the cursor, move the cursor to the sub-OUT point on the execution line and press the OUT key to assign the CURRENT data as the sub-OUT point. The sub-OUT point can also be assigned by entering using the CURSOR keys and numeric keys and pressing the SET key.

When the Audio Split mode is selected, the main-OUT point becomes the OUT point of video.
When the Video Split mode is selected, the main-OUT point becomes the OUT point of audio.
Therefore, if the mode is changed between these modes or when the split is canceled from these modes, the IN/OUT point data may be altered.



When a setting as shown above is made:

A SPLIT

No.	IN	OUT	AUDIO OUT
1	#1	#2	#3
2	#4	#5	#6

SPLIT cancellation: The display does not change but AUDIO OUT is ignored.

V SPLIT

No.	IN	OUT	VIDEO OUT
1	#1	#2	#3
2	#4	#5	#6

SPLIT cancellation: The display does not change but VIDEO OUT is ignored.

5 Execution of dual playback

In the dual play mode, both of the erase and record heads of the unit function as play heads so that, while a head is playing the first segment, the other head can search the IN point of the second segment.
At the same moment as the first segment has been played, the second segment starts to play, and the head which has been playing the first segment searches the IN point of the third segment and pauses there. This allows continuous playback of several segments without any search waiting time.
In the dual play mode, variable-speed playback such as JOG and SHUTTLE can also operate within the valid segment range.

Execution procedure

1. **Press the EXECUTE button so that the indicator lights.**
   The unit enters the dual play mode.
2. **Press the PLAY button.**
   Dual playback (1x-speed playback) is executed.
3. **Press the STOP button.**
   A still image is displayed.
4. **Press the EXECUTE button so that the indicator goes OFF.**
   The dual play mode is canceled.
   (The cancellation is valid in other modes than the dual play mode.)

NOTE:
It is not possible to enter the dual play mode while the cursor is being displayed.

6 Search

Any of the IN point, main-OUT point and sub-OUT point of segments on the execution line can be searched.

When the cursor is not displayed:
The IN point is searched.
When the cursor is displayed:
The point where the cursor is displayed is searched.

The search is executed with the SEARCH button or PREROLL button (preroll search).

7 Re-editing

The F5 to F8 keys can be used to perform re-editing by recalling, inserting, deleting and moving segments.
The common operations for these keys are to press the function key to light the mode indicators, press the SET key to execute, then press the function key again to turn the mode indicator OFF.

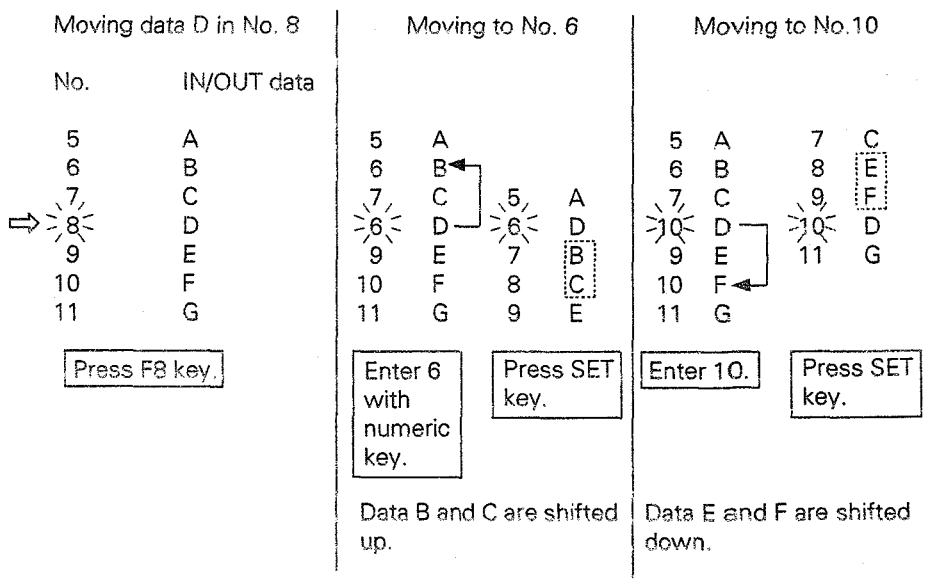
F5 SEG NO. (Recall of segment)
When this key is pressed ON, cursor appears on the segment No. on the execution line. By entering the segment No. to be recalled with numeric keys and pressing the SET key, the desired segment can be recalled on the execution line.

F6 INSERT (Insertion)
When this key is pressed ON and the SET key is pressed, the segment Nos. below the execution line increments by one so that unassigned segment can be inserted in the execution line.

F7 DELETE (Deletion)
When this key is pressed ON and the SET key is pressed, the segment in the execution line and the segments below it are shifted up by one line.

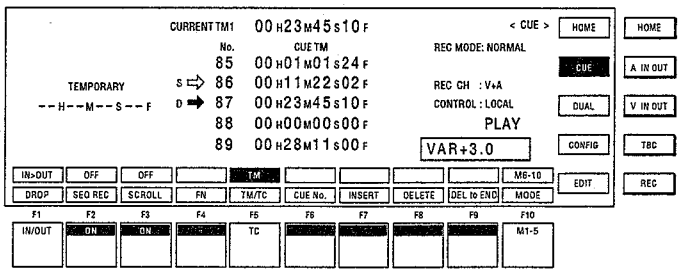
F8 MOVE (Moving or exchanging of segments)
When this key is pressed ON, the cursor appears on the segment No. on the execution line. By entering the destination segment No. and pressing the SET key, the segment data can be moved to another place.

Shift-up and shift-down of data resulting from execution of MOVE



3-6 CUE MODE

Enter the CUE MODE.



1 Selection of cue assignment method: F1

The cue assignment using the ENTRY IN and OUT buttons can be performed with the following two procedures.

IN>OUT: This is the temporary cue mode. Pressing the IN button assigns the current address in the temporary cue area, then pressing the OUT button establishes the assignment in the (established) cue area and clears the temporary cue data.

NOTES:
- *The OUT button is invalid if the temporary cue has been cleared.*
- *The temporary cue can be updated anytime by pressing the IN button.*

IN/OUT: This is the direct assignment, in which pressing the OUT button assigns and establishes the current address in the (established) cue area. The IN button can be used to assign data in the temporary cue area, which can be used as an independent cue data without any relation to the (established) cue data.

2 Cue point search procedure

In the CUE MODE, cue points can be searches using three buttons, EXECUTE, PREROLL and SEARCH.

EXECUTE: Search in the temporary cue.
PREROLL: Preroll search of the cue on the search execution line. (s ⇨)
SEARCH: Search of the cue on the search execution line.

NOTES:
- *The preroll time is set with S-EDIT MODE (F5).*
- *When the drop execution line (D ➡) is line No. 1, the search execution line also becomes No. 1.*

3-6 CUE MODE

3 Execution of sequential recording mode: F2

In this mode, when the scene being recorded is abandoned and to be re-recorded, the recording start point of the scene can be searched quickly and the head address of each scene is stored automatically as a cue data. This function is convenient because it allows to record several highlight scenes of a sport event, etc., without post-editing work. This mode is disabled when the CURRENT display content is TC.

Cue assignment modes

REC START	CURRENT → Assigned in both temporary cue and (established) cues
REC STOP (by EXECUTE button)	No change.
REC STOP (by other means than EXECUTE button)	CURRENT → Assigned in temporary cue only.
IN, OUT buttons	When the F2 (SQ REC) key is pressed to ON, the F1 (DROP) key is automatically set to the IN/OUT mode.

Operation example

<Operation>

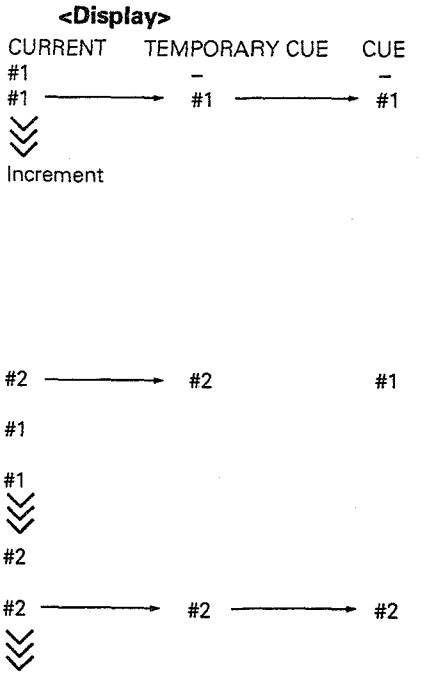
1. **Turn SQ REC (F2) ON.**
2. **Press REC & PLAY button.**
   Recording start, cue assignment

Is this scene to be saved?

NO / YES

3. **Press EXECUTE button.**
   Recording end
   #1 search
4. **Press STOP button.**
   Recording end, cue assignment
5. **Press SEARCH button.**
   #1 search
6. **Press PLAY button.**
   Replay operation
7. **Press EXECUTE button,**
   #2 search
8. **Press REC & PLAY button.**
   Recording start, cue assignment

<Display>



NOTES:

- *The operation of step 4 is added for the purpose of operation description, and the result is the same even when it is omitted.*
- *The value of the temporary cue data assigned at the end of recording is either equal to or smaller by a few frames than the actual address where recording ends.*

4 Scroll mode: F3

The cue points can be searched by simply operating the CURSOR up/down keys. This mode is valid only in the stop mode, and released automatically when the operation execution button is pressed.

5 Selection of cue point display: F4, F5

Use the F4 (FN) and F5 (TM/TC) key to select.

6 Re-editing

The F6 to F9 keys can be used to perform re-editing by recalling, inserting and deleting assigned cues.

F6 CUE No. (Recall of cue)
When this key is pressed ON, cursor appears on the cue No. on the drop execution line. By entering the cue No. to be recalled with numeric keys and pressing the SET key, the desired cue can be recalled on the drop execution line.

F7 INSERT (Insertion)
When this key is pressed ON and the SET key is pressed, the cue Nos. below the drop execution line increments by one so that unassigned cue can be inserted in the drop execution line.

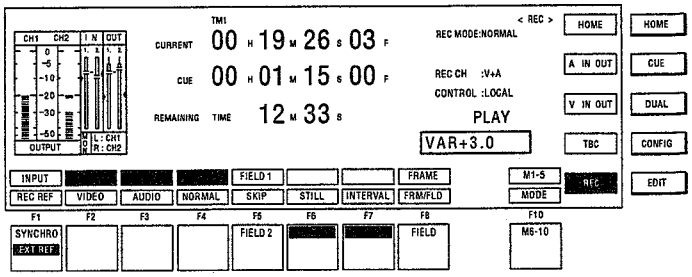
F8 DELETE (Deletion)
When this key is pressed ON and the SET key is pressed, the cue in the drop execution line and the cues below it are shifted up by one line.

F9 DEL TO END (Delete To End)
When this key is pressed so that the indicator lights then the SET key is pressed, all cue data with larger cue Nos. than the drop execution line will be deleted.

3-7 SPECIAL RECORDING

This unit has four recording modes, NORMAL, SKIP, STILL and INTERVAL. As the NORMAL recording mode is described in section 3-3 "Recording procedure", this section describes the three latter modes.

Enter the REC MODE.



1 SKIP REC mode

This mode records only fields 1 or fields 2 successively. The recording time can be doubled by combining this mode with the SKIP F1 or SKIP F2 playback modes selected with the F7 (PB MODE) key in the HOME mode.
The audio recording is the same as the NORMAL mode.

Mode selection:

Press the F5 (SKIP) key to light the mode indicators (inverted display). The field to be recorded can be switched between 1 and 2 by pressing the same F5 key.

Mode cancellation:

Press the F4 (NORMAL), F6 (STILL) or F7 (INTERVAL) key.

2 STILL REC mode

In this mode, a still image can be recorded every time the REC/EDIT and PLAY buttons are pressed. The unit of still image can be switched between FRAME and FIELD, and the audio recording is also performed on a per-frame or per-field basis.

Mode selection:

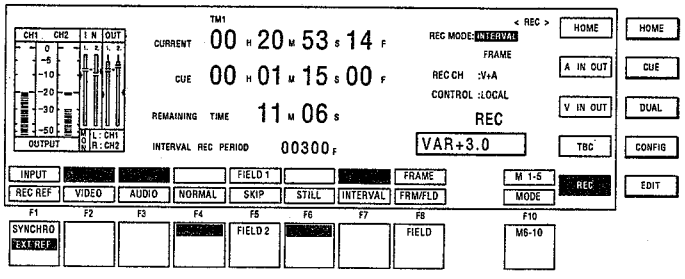
Press the F6 (STILL) key to light the mode indicators.
Press the F8 (FRM/FLD) key to select FRAME or FIELD.

Mode cancellation:

Press the F4, F5 or F7 key.

3 INTERVAL REC mode

In this mode, still images are recorded at certain time intervals. The unit of still image can be switched between FRAME and FIELD, and the audio recording is also performed on a per-frame or per-field basis.
When this mode is selected, "INTERVAL REC PERIOD ——F" appears on the EL display.



Mode selection:

Press the F7 (INTERVAL) key to light the mode indicator.
Press the F8 (FRM/FLD) key to select FRAME or FIELD.

Interval period assignment:

Press the CURSOR center key to display the cursor, and move the cursor to "INTERVAL REC PERIOD" using the CURSOR movement keys.
Enter the interval period in frames using numeric keys, and press the SET key to assign it.

NOTE:

A value smaller than 6 cannot be entered.

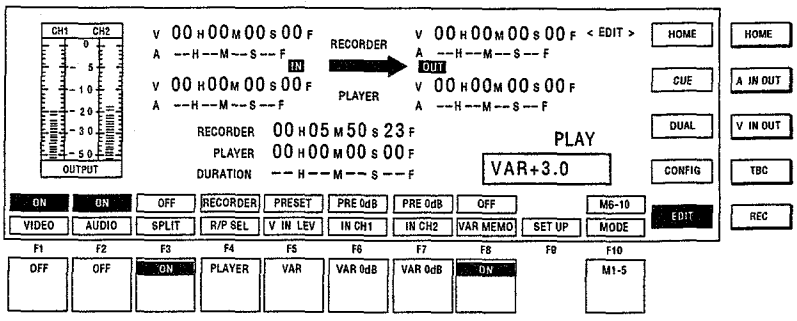
Mode cancellation:

Press the F4, F5 or F6 key.

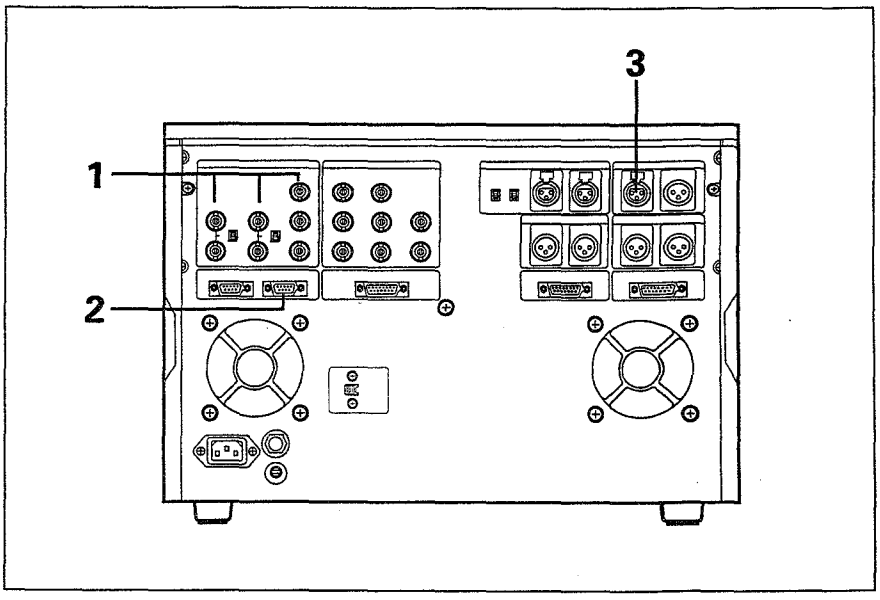
3-8 EDITING

1. EDIT MODE

Enter the EDIT MODE.



Preparations before editing



1 **Connect the video, audio and reference signals between the playback unit (VDR, VCR, camera, etc.) and this unit.**

2 **If the playback unit is to be remotely controlled from this unit, connect the rear panel's REMOTE 1 (RS-422A) OUT terminal to the RS-422A (9-pin serial) IN terminal on the playback unit.**

3 **If it is desired to record a time code from the playback unit or an external time code generator in the TC2 area, connect the time code signal line to the TIME CODE IN terminal.**
(In this case, the optional VDA-V002 time code board is necessary.)

4 Turn on the power to this unit and the playback unit.

5 Select REC MODE on this unit.
NORMAL mode is set if NORMAL, STILL or INTERVAL is selected. SKIP mode is set only if SKIP is selected.

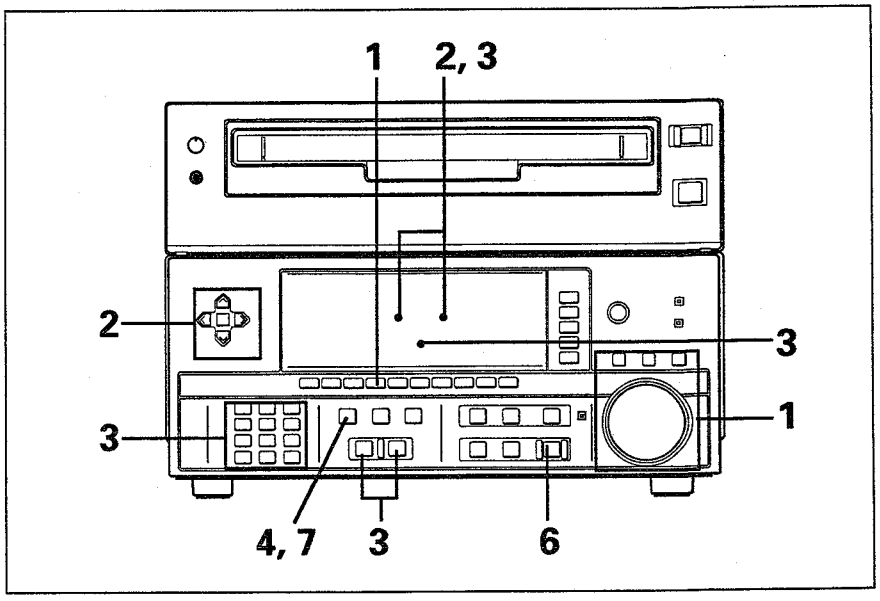
6 Adjust the video and audio input levels.
When either the F6 (IN CH1) or F7 (IN CH2) key is pressed so that the indicator lights, the audio level meter displays the input level. Press the F5 (V IN LEV), F6 and F7 keys so that the indicators light, and adjust the video input level with the TRIM control.

7 If this unit's REC INHIBIT indicator lights, the inserted disc is write protected. Remove the disc and release the write protection state.

8 When using this unit to remotely control the playback unit, set the S-EDIT mode's F1 (W/P SEL) key to ON. Select the modes in which the playback unit responds to commands in REMOTE mode with the 9-pin serial interface (with a VDR, in HOME mode set the F9 (CONTROL) key to REMOTE and the F8 (REMOTE) key to 422NORM).

9 Editing operation begins from this point.

Editing operation



1 Using the F4 (R/P SEL) key to switch between the recorder and player, locate the desired editing position on each unit.

2 Press the cursor button so that the necessary time data starts blinking.

3 Press the number buttons or the ENTRY IN and OUT buttons to enter the editing points.
When the ENTRY IN or OUT button is pressed, the time data in the current position display area is entered directly for the currently blinking IN or OUT point. To enter the IN and OUT points using the number buttons, enter one digit at a time in the time data area indicated by the blinking cursor, then press the SET button to set the data.

4 After setting the necessary editing points, you can execute a preview by pressing the EXECUTE button.
However, if the S-EDIT mode F4 (RE-TRY) key is ON and the F5 (PREROLL) key is set to 0 SEC, PREVIEW and EDIT cannot be executed.

5 **If it is necessary to correct one or both of the editing points, press the cursor buttons so the desired editing point starts blinking, then after moving to the desired location in JOG mode, etc., reenter the correct point with the ENTRY button or with the numeric keys and SET key.**

6 **Once the editing points are set as desired, press the REC/EDIT button to execute the editing operation.**

7 **To check the editing result, press the EXECUTE button to execute a preview.**

NOTE:
The recorder's time data is restricted to one of the timers. Even if the time code display is selected in HOME mode, etc., when the unit is switched to EDIT mode the time data automatically switches to TM1 or TM2.

Video recording ON/OFF setting: F1

Each press of the key switches video recording ON or OFF.
ON ⟷ OFF

ON: Video recording/editing is carried out.
OFF: Video recording/editing is not carried out.

Audio recording ON/OFF setting: F2

Each press of the key switches audio recording ON or OFF.
ON ⟷ OFF

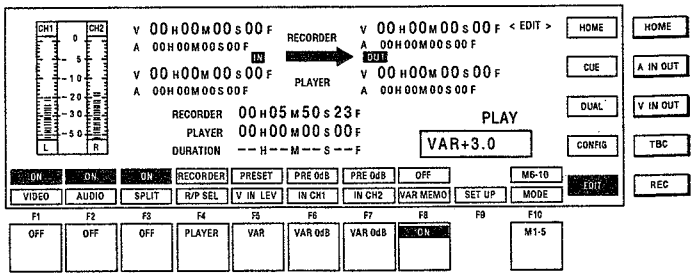
ON: Audio recording/editing is carried out.
OFF: Audio recording/editing is not carried out.

Split editing ON/OFF setting: F3

Each press of the key switches split editing ON or OFF.
ON ⟷ OFF

ON: Splitting the audio editing point from the video editing point is possible.

To execute split editing for the audio editing point, set this key to ON, press the cursor button so that the time data for the desired editing point starts blinking, then enter the editing point.
OFF: Splitting the audio editing point is prohibited.



Recorder/player selection: F4

This key selects which component is controlled from this unit's front panel. Each press of the button switches between RECORDER and PLAYER.
RECORDER ⟷ PLAYER

RECORDER: In this mode, this unit controls itself.
PLAYER: In this mode, this unit controls the player connected to the REMOTE 1 (RS-422A) OUT terminal. In S-EDIT mode, set the F1 (W/P SEL) button to ON.

Video input level adjustment: F5

Press the key so that the indicator lights (inverted display).
Adjust with the TRIM control.
Press the key again so that the indicator goes OFF (normal display); the set level will be fixed.

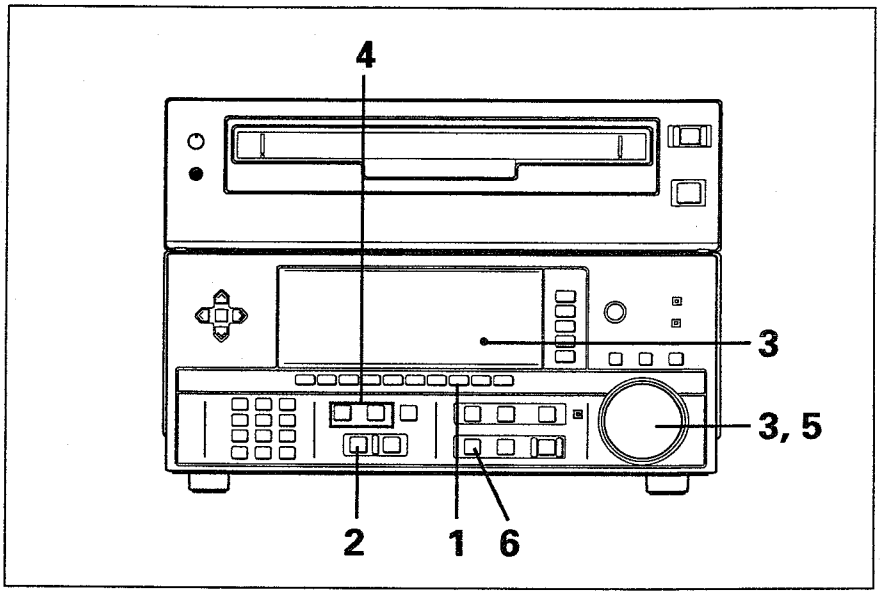
Audio input level adjustment: F6, F7

Press each key so that the indicator lights (inverted display). The audio level meter displayed the input level.
Adjust with the TRIM control.
Press the key again so that the indicator goes OFF (normal display); the set level will be fixed.
The user preset levels can also be set with the same procedure as in the A IN OUT MODE.

Variable memory mode selection: F8

This mode allows this unit to memorize and reproduce variable playback speeds.

Memorization procedure



1 **Set the F8 (VAR MEMO) key to ON.**

2 **Enter the IN point at the location where you want variable mode playback to start.**

3 **Turn the search dial to set the initial speed. The speed is displayed in the VAR display area.**

4 **Simultaneously press the PREROLL button and EXECUTE button. Playback is carried out at the set speed starting from the preroll point.**

5 **If it is desired to change the speed after passing the IN point, turn the SEARCH dial as required. The initial speed and subsequent speed changes are memorized by the unit.**

6 **To stop the memorizing operation, press the STOP button.**

Playback procedure

When the EXECUTE button is pressed, the unit returns to the preroll point and immediately starts playback at the memorized speed.

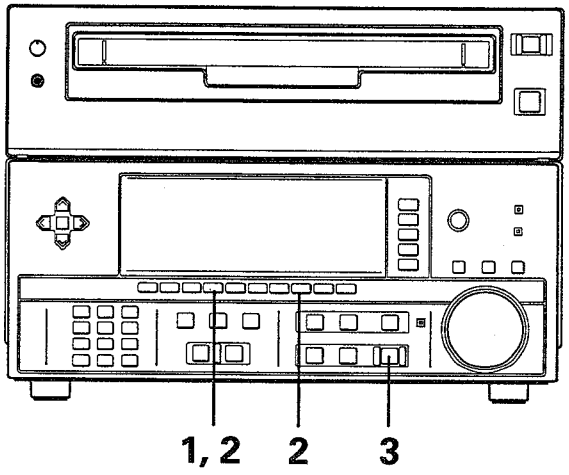
Changing the memorized contents

This procedure is the same as the "Memorization procedure."

Canceling variable memory mode

Set the F8 (VAR MEMO) key to OFF.

Editing procedure using variable memory mode



1 **Select the player (by setting F4 to PLAYER) and memorize the desired speed(s) using the previously described memorization procedure.**

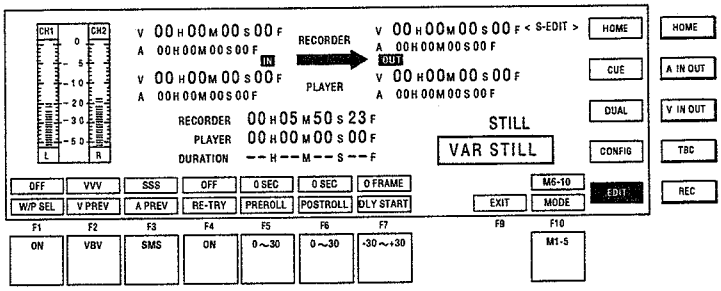
2 **Set F4 to RECORDER and set F8 to OFF.**

3 **Press the REC/EDIT button and carry out editing.**

Moving to S-EDIT MODE: F9 Pressing the F9 (SET UP) key moves to S-EDIT mode.

2 S-EDIT MODE

Enter the S-EDIT MODE.



Switching control of connected player ON/OFF: F1

This key selects whether or not remote control of the player connected to the REMOTE 1 (RS-422A) OUT terminal is possible. Each press of the key switches control ON or OFF.
ON ⟷ OFF

Selecting the preview mode: F2, F3

After all necessary editing points have been selected, pressing the EXECUTE button executes a preview operation.
During the preview operation, the preroll area and postroll area are played from the disc in the recorder, and the edit area can be selected as follows.

Video preview: F2

Each press of the key switches between VVV and VBV.
VVV ⟷ VBV

VVV: The edit area is set to the player's playback video signal.
VBV: The edit area is set to a black screen.

Audio preview: F3

Each press of the key switches between SSS and SMS.
SSS ⟷ SMS

SSS: The edit area outputs the player's playback audio signal.
SMS: The edit area is muted.

Execution of a retry operation: F4

If this unit cannot obtain proper phase or servo lock with the player during editing, you can select whether to interrupt or continue the editing procedure.
Each press of the key switches between ON and OFF.
ON ⟷ OFF

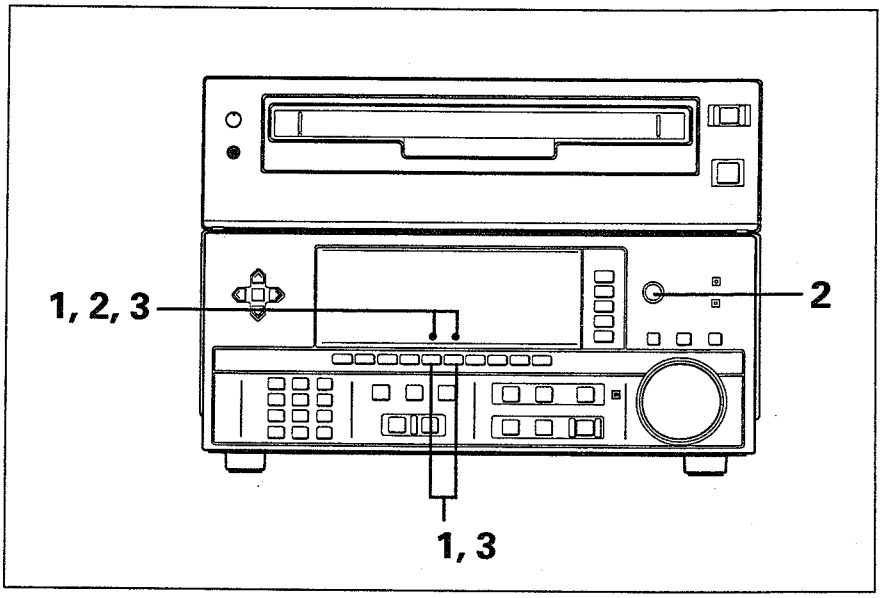
ON: Editing is interrupted, the unit returns to the preroll point and a retry operation is executed.
OFF: Editing continues with the components out of phase.

NOTE:
When setting the retry function to ON, be sure to set the preroll time (explained on the next page) to 1 SEC or greater.

Setting the preroll time: F5

Setting the postroll time: F6

During editing, both the preroll time and postroll time can be set from 0 to 30 seconds in 1 second increments.



1 Press the F5 or F6 key so that the indicator lights (inverted display).

2 Turn the TRIM control to vary the numerical value in the setting area between 0 and 30 SEC.

3 When the desired time is shown, press the same key again. The display area returns to a normal display and the selected time value is set.

Setting the delay start time: F7

The delay time from when the playback command is issued to when this unit starts executing can be set within a range from –30 to +30 frames in single frame steps. The setting procedure is the same as for setting the preroll time and postroll time. This delay start time is convenient for synchronizing with components such as VCRs which have widely varying start-up times.

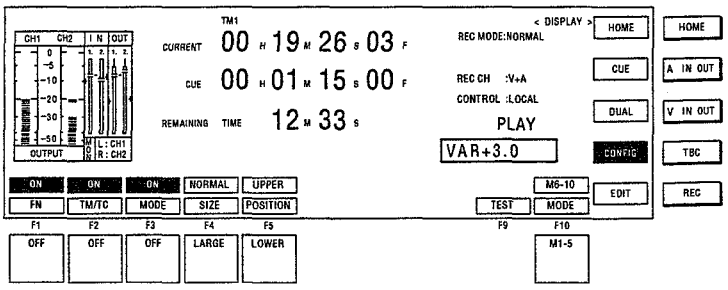
Returning to EDIT mode: F9

Press the F9 (EXIT) key to return to EDIT mode.

3-9 SUPERIMPOSITION

This operation consists of the setting of the contents to be superimposed onto the output from the VIDEO 3 connector.

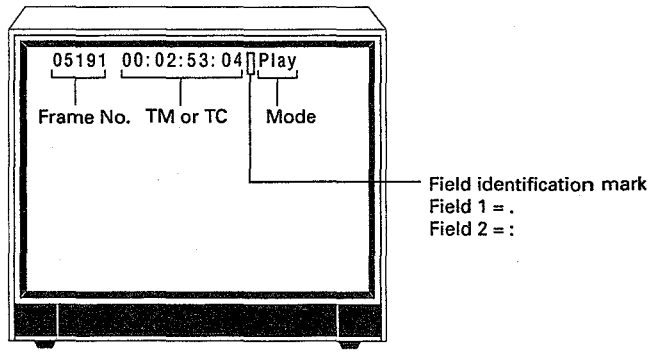
Enter the DISPLAY MODE.



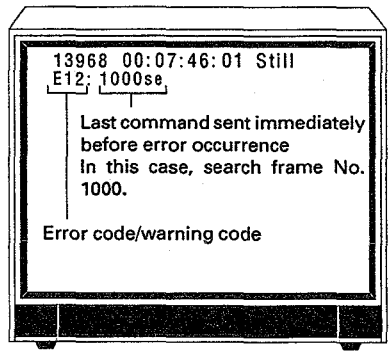
Display content selection
Select the display content with the F1 (FN), F2 (TM/TC) and F3 (MODE) keys.

Character size switching
Press the F4 (SIZE) key to switch between NORMAL (normal size) and LARGE (double-height size).

Display position switching
Press the F5 (POSITION) key to switch between UPPER and LOWER.



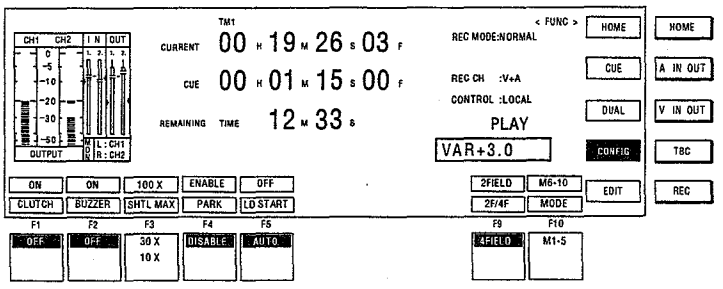
Error message display
In case an error occurs, in addition to the display contents shown above, an error code and the last command before the error occurrence are displayed regardless of whether the F1 to F3 keys are ON or OFF.
The codes displayed here may include warning codes, that is, other codes than the error codes displayed when the front panel is in the MESSAGE MODE.


13968 00:07:46:01 Still
E12: 1000se
Last command sent immediately before error occurrence
In this case, search frame No. 1000.
Error code/warning code

3-10 SYSTEM SETTING

1 Function setting

Enter the FUNC MODE.



Search dial click ON/OFF: F1

Selects where click positions are provided for the search dial for use in setting the VAR and SHUTTLE playback speed.
ON: Clicks are provided.

Key operation confirmation buzzer ON/OFF: F2

Shuttle maximum speed setting: F3

100x: Maximum speed is approx. 100x speed.
30x: Maximum speed is approx. 30x speed.
10x: Maximum speed is approx. 10x speed.

PARK enable/disable: F4

Selects whether the PARK button and the STDBY OFF command during remote control are enabled or disabled.

Loading start mode ON/OFF: F5

AUTO : Playback starts automatically after the disc has been loaded. Both the PARK button and STDBY OFF command are disabled.
OFF: Playback does not start automatically.

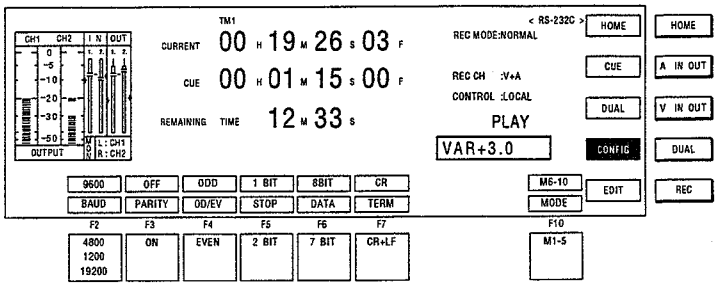
Servo lock mode selection: F9

2 FIELD: Locked with 2-field sequence.
4 FIELD : Locked with 4-field sequence.

NOTE:
While selecting 4-field sequence, 1st and 2nd fields of the video composite signal are recorded on the odd frame of the TM2 and 3rd and 4th fields are recorded on the even frame. When the 4-field sequence has been selected, the odd and even values of the TM1 and TM2 are not equal to each other, the value of the TM1 is automatically rounded up by 1 frame.

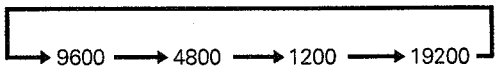
2 RS-232C condition setting

Enter the RS-232C MODE.



Baud rate selection: F2

The baud rate setting changes every time the key is pressed.



Parity bit yes/no selection: F3

ON: Parity bit is added.
OFF: Parity bit is not added.

Parity odd/even selection: F4

Effective only when F3 is ON.
ODD: Selects odd parity.
EVEN: Selects even parity.

Stop bit selection: F5

Press this key to select whether the number of stop bits is 1 bit or 2 bits.

Data length selection: F6

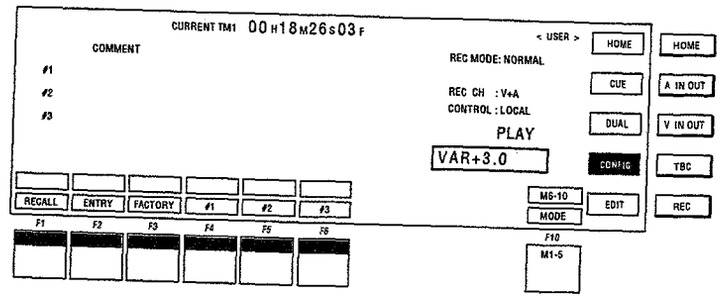
Press this key to select whether the data length is 8 bits or 7 bits.

Terminator selection: F7

Press this key to select whether the terminator is carriage return alone (CR) or carriage return plus line feed (CR + LF).

3 Assignment and recall of key setup

Enter the USER MODE.



In addition to the factory setup, three kinds of setup of the function keys on the front panel can be assigned by the user and later recalled.

Recalling the factory setup

1. Press the STOP button so that a still image is displayed, the press the PARK or EJECT button to enter the PARK or EJECT mode.
2. Press the F1 (RECALL) key to light the mode indicator.
3. Press the F3 (FACTORY) key to light the mode indicator.
4. Press the EXECUTE button to recall the factory setup. This sets the entire factory setup on the unit.

Recalling user setup

In place of the F3 (FACTORY) key in 3 above, select one of the user setups #1, #2 and #3, and press the corresponding F4, F5 or F6 key to light the mode indicator. Other operations are the same as a above.

Assignment of user setup

1. Press the STOP button so that a still image is displayed, then press the PARK or EJECT button to enter the PARK or EJECT mode.
2. Press the F2 (ENTRY) key to light the mode indicator.
3. Press the F4, F5 or F6 key corresponding to the desired user No. to light the mode indicator.
4. The cursor is displayed in the COMMENT area. Enter each character by selecting numerals, alphabets or symbols with the TRIM control and pressing the CURSOR center key, and press the EXECUTE button to assign. This sets the whole of the current setting condition under the entered user No.

CHAPTER 4 SPECIFICATIONS

4-1 Specifications 4-2

4-1 SPECIFICATIONS

General

Recording/playback system ..... Magneto-Optical (MO) system
Light source ..... Laser diode
Optical head configuration ..... 2 separate heads
Recording medium ..... 30 cm disc cartridge
Recording time ..... Motion pictures: 32 minutes
Still pictures: 48000 frames
Disc rotation speed ..... Frame frequency (1500 rpm) - CAV
Access time ..... Average 0.3 second
Editing accuracy ..... 0 frame
Power supply ..... 110 - 120 V/220 - 240V AC, 50/60 Hz
Power consumption ..... 120 W
Dimensions ..... 436 x 321 x 649 mm (WxHxD)
Weight ..... 42 kg
Operating temperature ..... +5 to +35°C
Storage temperature ..... –20 to +60°C
Storage Humidity ..... 20 to 80%

Video system

Recording format ..... Time-compression integrated analog components
(Compression ratios: Y=1.2, P_B,P_R=7.2)
Bandwidth
Luminance ..... 4.8 MHz $^{+0}_{-6}$ dB
S/N (frame number : 20000)
Luminance ..... 45 dB (component)
42 dB (composite)
Chroma ..... 48 dB (both AM and PM)
DG ..... 3 %
DP ..... 3 DEG
K factor ..... 3% (2T pulse)
YC delay ..... ±50 nsec
Input video level (VIDEO input only)
Variation range ..... ±3 dB
AGC ..... ±6dB
Output variation ranges
Video level ..... ±3 dB
Chroma level ..... ±3 dB
Black level ..... ±100 mV
System SC phase ..... 360 DEG (VIDEO output only)
System sync phase ..... +3 to –1 µsec
YC delay ..... ±100 nsec

Audio system

Recording format ..... Time-compression integrated PCM
Modulation system ..... M^2
Number of channels 2
Bandwidth ..... 15 kHz
Dynamic range ..... 85 dB
Headroom ..... 20 dB
Crosstalk ..... –65 dB

SPECIFICATIONS

Input/Output Signals

Video inputs

<Connector Name>	<Signal Name>	<Level>	<Impedance>
VIDEO	Composite video	1 Vp-p	75-ohm ON/OFF
EXT REF*	Video	1 Vp-p	75-ohm ON/OFF
	Composite sync	4 Vp-p	75-ohm ON/OFF
Y*	Component luminance	1 Vp-p negative sync	75-ohm
P_B, P_R*	Component color differences	0.7 Vp-p	75-ohm
G, B, R*	Analog GBR	0.7 Vp-p	75-ohm

Video outputs

VIDEO 1, 2	Composite video	1 Vp-p	75-ohm
VIDEO 3	Composite video (superimposition possible)	1 Vp-p	75-ohm
Y*	Component luminance	1 Vp-p negative sync	75-ohm
P_B, P_R*	Component color differences	0.7 Vp-p	75-ohm
G, B, R*	Analog GBR	0.7 Vp-p	75-ohm
BLACK BURST	Black burst	0.3 Vp-p (both B, S)	75-ohm
SYNC	Composite sync	4 Vp-p	75-ohm

Audio

INPUT CH1, 2	Audio input	+4/–20 dBm switchable	600-ohm/high-impedance switchable
OUTPUT CH 1, 2	Audio output	+4 dBm (nominal), variable	Low-impedance
MONITOR L, R	Monitor output (CH1/CH2 switchable)	+4 dBm (nominal), variable	Low-impedance
PHONES	Headphones output	Variable with PHONES control	

**** NOTE:***
The EXT REF input and input/output signals are switchable between Y/P_B/P_R and G/B/R on the front panel.

SPECIFICATIONS

Time code (valid only when optional board is installed)

TIME CODE IN	EBU input	1.0 ~ 5.0 V p-p	10 k ohm
TIME CODE OUT	EBU output	2.4 Vp-p	Low impedance

Remote connectors

REMOTE 1	RS-422A interface	Input/output in compliance with 9-pin serial interface
REMOTE 2	RS-232C interface	Pioneer LD player serial interface compatible
TBC REMOTE	TBC remote control	In compliance with BVW series
AUX	Reserved for future system expansion	

Supplied accessories

Operating Instructions x 1

Optional accessories

1. Time code board (VDA-V002)
2. Rack mount kit (VDA-V001)

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.